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# STATE OF TENNESSEE

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REPORT OF

R. A. SHIFLETT

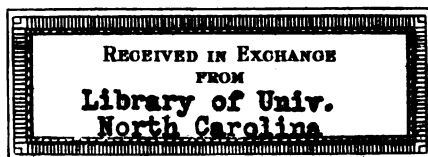
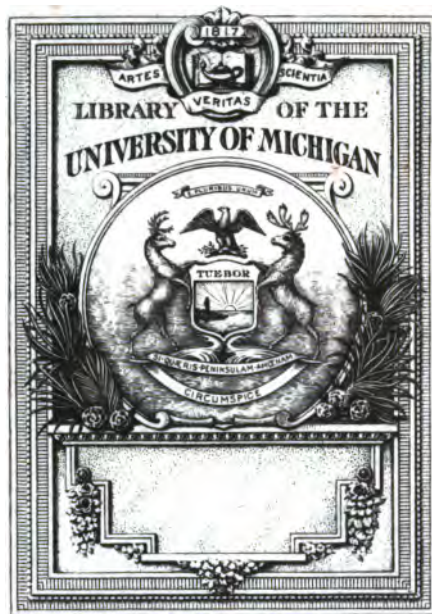
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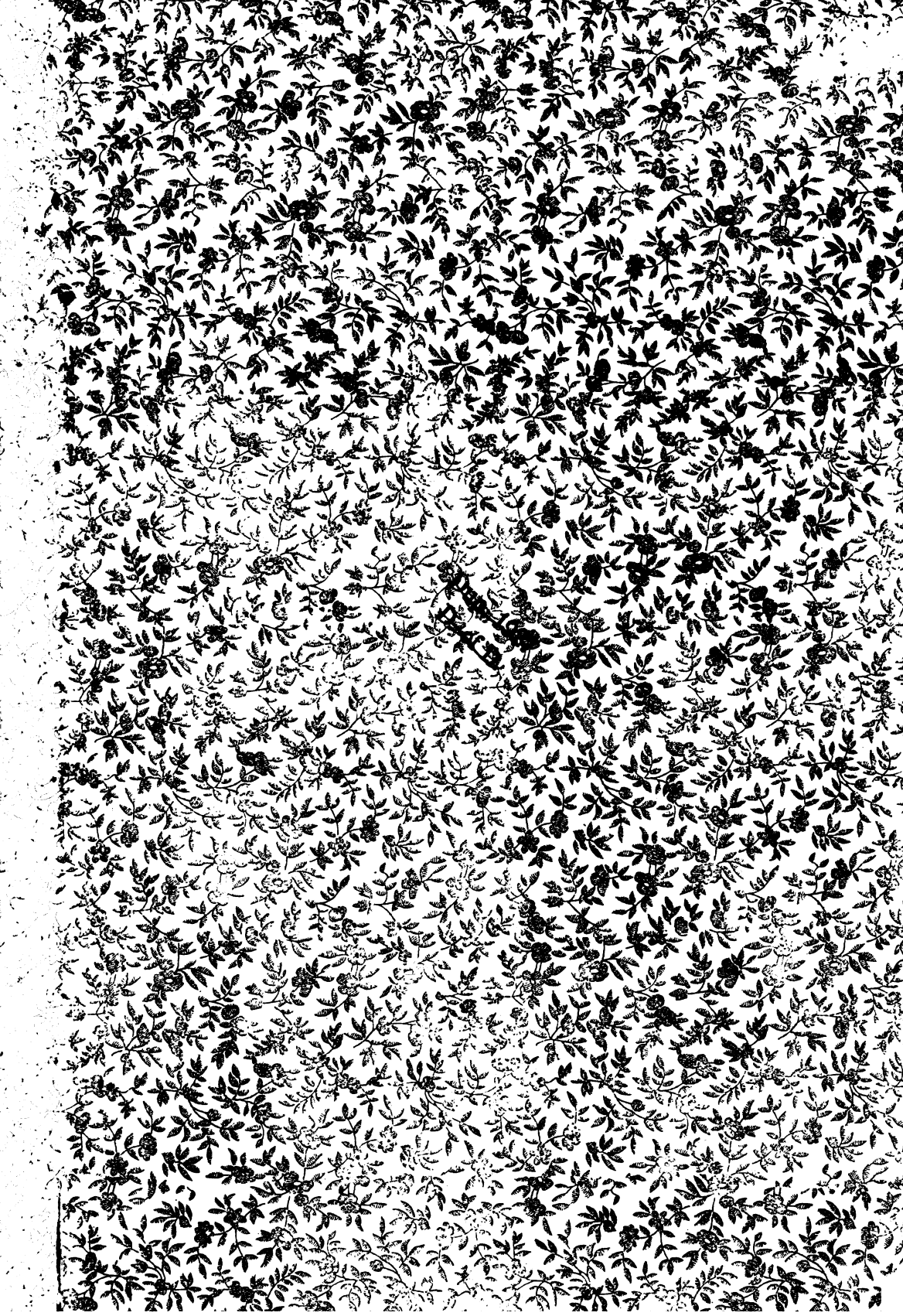
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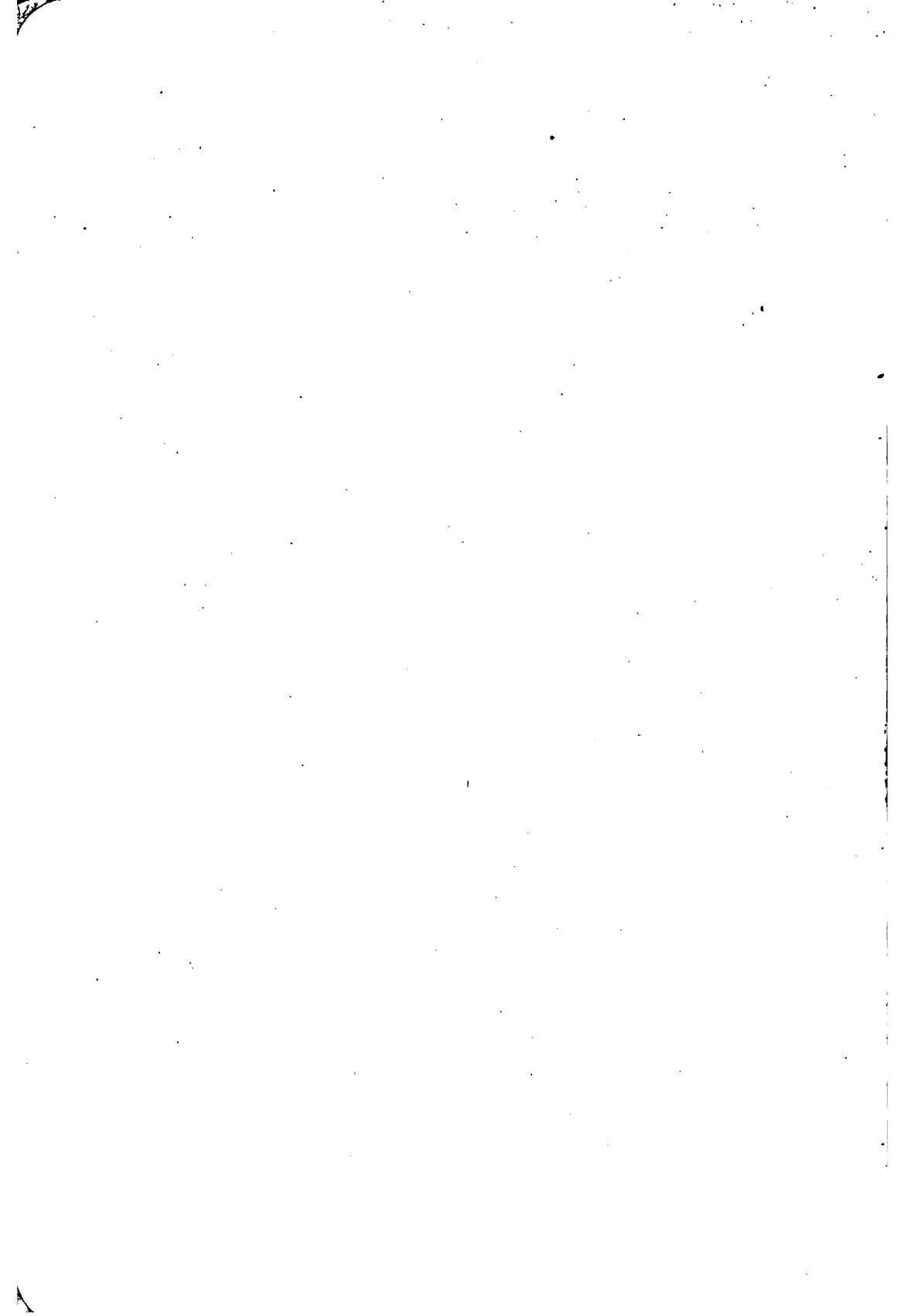
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NASHVILLE

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STATE OF TENNESSEE

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SEVENTEENTH ANNUAL REPORT

OF THE

*Tenn.*  
MINING DEPARTMENT

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WITH COMPLIMENTS OF

*Allan*  
**R. A. SHIFLETT**

CHIEF MINE INSPECTOR

Editors of periodicals will please forward copy of issue containing notice or review. Acknowledgment is requested from all to whom this Report is sent. The edition of the annual reports of this Department being limited, the names of those who fail to acknowledge receipt of the book will be stricken from the mailing lists.

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NASHVILLE  
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1908



STATE OF TENNESSEE

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SEVENTEENTH ANNUAL REPORT

OF THE

*Gen.*  
MINING DEPARTMENT

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R. A. SHIFLETT

CHIEF MINE INSPECTOR

NASHVILLE

MINERAL RESOURCES OF TENNESSEE

1907

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**LETTER OF TRANSMITTAL.**

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OFFICE OF CHIEF MINE INSPECTOR.

NASHVILLE, TENN., July 1, 1908.

*To His Excellency, Hon. Malcolm R. Patterson, Governor of Tennessee:*

DEAR SIR: I herewith submit to you the Seventeenth Annual Report of this Department, embracing the mineral resources of Tennessee for the year 1907.

Very respectfully,

R. A. SHIFLETT,

*Chief Mine Inspector.*



## INTRODUCTION

The varied character of the units of measurement employed in the mining industry makes it impossible to compare the outputs of the several minerals, except as to value of products.

The value of the mineral product of Tennessee for 1907 amounts to \$23,302,621.

In importance as to mineral product coal ranks first, with pig iron second, copper third, phosphate fourth and coke fifth.

The figures given show a continuation of the activity in the mineral industries of the State noted for 1900, and subsequent years.

There were 25,124 employes engaged in mining and in the reduction of mineral products.

There was expended for labor the enormous sum of \$10,348,504.

As compared with other States the rank of Tennessee is as follows: Coal product, 11; coal values, 12; coke, 6; barytes, 2; clay products, 22; copper, 6; coal gas, 19; gas coke, 20; coal tar, 19; iron ore, 7; pig iron, 7; lime, 17; limestone, 16; marble, 4; mineral waters, 23; phosphate rock, 2; pottery, 11, and sand and gravel, 12.

## METALS.

*Iron.*—The production of pig iron for 1907 amounted to 391,308 long tons, valued at \$6,907,072. As compared with 1906 this is a decrease in product of 43,080 long tons, or 10 per cent., and an increase in values of \$560,025 or 9 per cent.

*Iron Ores.*—The production of iron ores for 1907 amounted to 817,767 long tons, valued at \$1,306,727. As compared with 1906 this is a decrease of 61,292 long tons, or 7 per cent., and an increase in values of \$53,874, or 4.3 per cent.

*Manganese Ores.*—The production of manganese ores for 1907 amounted to 150 long tones, valued at \$2,250.

*Gold.*—The production of gold for 1907 amounted to 253 fine ounces, valued at \$5,239.

*Silver.*—The production of silver for 1907 amounted to 85,532 fine ounces, valued at \$55,875.

*Copper.*—The production of copper for 1907 amounted to 18,892,309 pounds, valued at \$3,652,720. As compared with 1906 this was an increase in product of 1,537,528 pounds, or 8.85 per cent., and an increase in value of \$440,754, or 13.72 per cent.

*Lead.*—The production of lead ore for 1907 amounted to 85 short tons, valued at \$785.

*Zinc.*—The production of zinc ore for 1907 amounted to 4,118 short tons, valued at \$14,821.

## FUELS.

*Coal.*—The production of coal for 1907 amounted to 6,540,911 short tons, valued at \$8,482,899. As compared with 1906 this is an increase in product of 668,454 short tons, or 10.65 per cent., and an increase in values of \$917,613, or 12.13 per cent.

*Coke.*—The production of coke for 1907 amounted to 453,729 short tons, valued at \$1,408,303. As compared with 1906 this is a decrease in product of 30,943 short tons, or 6.38 per cent., and an increase in values of \$57,674, or 4.27 per cent.

*Gas, Gas Coke, Tar and Ammonia.*—The aggregate value of all products obtained from the distillation of coal in gas works and retort ovens and of oil and water gas made in 1907 amounts to \$953,265.

*Natural Gas.*—The value of the natural gas produced in 1907 was \$300.

## STRUCTURAL MATERIALS.

*Clay Products.*—The value of all clay products for 1907 amounted to \$1,502,690. The brick and tile product was valued at \$1,219,754, and pottery product was valued at \$166,068.

The commercial production of clay mined and sold in 1907 by those not manufacturing clay themselves was valued at \$116,868.

*Lime.*—The production of lime for 1907 amounted to 73,213 short tons, valued at \$244,092.

*Stone.*—Tennessee produces limestone, marble and sandstone.

*Limestone.*—The production of limestone for 1907 amounted to 694,441 short tons, valued at \$372,143.

*Marble.*—The production of marble for 1907 was 422,611 cubic feet, valued at \$699,041. As compared with 1906 this is an increase in cubic feet of 60,674, or 16.76 per cent., and an increase in values of \$122,782, or 21.30 per cent.

*Sandstone.*—The production of sandstone for 1907 was 3,765 short tons, valued at \$15,179.

Included in this chapter is the limestone used for fluxing in blast furnaces and other detailed disposition of stone product.

## PIGMENTS.

*Barytes.*—The production of barytes for 1907 amounted to 20,863 short tons valued at \$45,863. As compared with 1906 this is an increase in product of 19,109 short tons, or 10.90 per cent., and an increase in values of \$39,424, or 612.27 per cent.

*Mineral Paints.*—The commercial production of mineral paints for 1907 amounted to 2,700 short tons, valued at \$36,000.

## CHEMICAL MATERIALS.

*Phosphate Rock.*—The production of phosphate rock for 1907 amounted to 654,641 long tons, valued at \$2,896,169. As compared with 1906 this is an increase in product of 154,826 long tons, or 31 per cent., and an increase in values of \$1,043,329, or 56.31 per cent.

## MISCELLANEOUS.

*Mineral Waters.*—The production of mineral waters for 1907 was 799,545 gallons, valued at \$80,639.

*Sand and Gravel.*—The production of sand for molding, building, engine, furnace and other purposes, and of gravel for 1907, was 1,273,325 cubic yards of 2,500 pounds, valued at \$306,753.

## MINING LAWS.

The existing mining laws are giving general satisfaction. No mine explosions have occurred during the year, and the mines are all in good workable condition.

Many improvements have been made and new machinery and other new mining equipment installed by commercial operators reported active during the year.

The department has exercised every precaution to avoid accidents and explosions, by placing many of the mines under special rules, restricting the charge of powder and quantity of powder taken into the mines, number of shots, time of firing, kind of tamping used, the employment of skilled men as shot firers, and the employment of gas bosses and inspectors, whose duty requires them to inspect the mines before the miners are allowed to enter.

These rules and regulations have been formulated as a necessary supplement to the mining law, facilitating a full compliance with its provisions and reducing the possibility of mine explosions to a minimum.

## ACKNOWLEDGMENTS.

To the individual operators and officials of the operating companies who not only furnished statements of product and other data called for in the schedules, but who also replied promptly to special inquiries incident thereto, the sincere appreciation of the department is extended.

Acknowledgments are due to the mine foremen who have complied with the laws, as well as to a very large number of the miners, for their co-operation with the mine inspectors in complying with the requirements of special rules formulated for their protection in the management of the mines.

Acknowledgments are also due Mr. Frederick L. Hoffman, expert statistician, of Newark, N. J., for extracts from an able article written by him upon mining accidents in the United States and Canada, and published in the *Engineering and Mining Journal* of New York City.

Acknowledgments are also due the chief of the division of mines and mineral resources and other officials of the United States Geological Survey for valuable statistical extracts pertaining to the production of such minerals of the United States and of the world as are herein embraced.

Special acknowledgments are due to District Mine Inspectors L. O. Stone and E. P. Tipton, and District Mine Inspector and Statistician J. W. Allen, and R. H. Bartlett, clerk, for the comprehensive and efficient manner in which they have performed their respective duties.

### BRIEF STATISTICS, 1907

The following statement gives brief statistics of all operations in Tennessee engaged in mining or the reduction of mineral products in 1907:

#### *Brief Statistics, 1907.*

PRODUCT	Quantity	Value	Total No. of Employees	Average Wages Pd Per Day	Total Amt. Paid for Labor
Barytes (short tons) .....	20,863	\$ 45,863	231	\$1 08	\$ 20,536
Brick and tile .....		1,219,754	2,199	1 38	601,046
Clay (short tons) .....	61,103	116,868	302	1 33	79,386
Coal (short tons) .....	6,940,911	8,482,899	11,098	2 21	5,540,520
Coke (short tons) .....	453,729	1,408,303	539	1 53	194,497
Copper (pounds) .....	18,892,309	3,652,720	743	2 03	455,495
Gas, coke, tar & ammonia... ..		953,265	372	1 65	191,925
Gold (fine ounces) .....	253	5,239	a	a	a
Iron (ore), (long tons) .....	817,767	1,306,727	2,307	1 49	772,067
Iron (pig), (long tons).....	391,308	6,907,072	1,575	1 45	763,121
Lead (short tons) .....	85	785	90	1 70	12,800
Lime (short tons) .....	73,213	244,092	357	1 40	107,725
Limestone (short tons) ....	694,441	372,143	927	1 40	246,106
Manganese ore (long tons)..	150	2,250	5	1 25	1,750
Marble (cubic feet).....	422,611	699,041	619	1 31	169,932
Mineral Paints (short tons).	2,700	36,000	54	1 50	13,900
Mineral waters (gal. sold)...	799,545	80,639			
Natural gas .....		300			
Phosphate rock (long tons)..	654,641	2,896,169	3,344	1 43	1,033,811
Pottery .....		166,068	149	1 30	46,818
Sand and Gravel (cu. yards, 2,500 lbs.).....	1,273,325	306,753	190	1 68	89,529
Sand Stone (short tons) ....	3,765	15,179	23	1 45	7,340
Silver (fine ounces) .....	85,532	55,875	a	a	a
Zinc (short tons) .....	4,118	14,821	b	b	b
Total .....		\$28,988,825	25,124		\$10,348,504

a—Included in copper. b—Included in lead.

From the above figures there should be excluded all duplication of values.

Pig iron is made from iron ore, coke and limestone, therefore the value of these minerals used in the manufacture of pig iron should be deducted from the value of pig iron, as it is either embraced in the value of coke, iron ore or stone product

given in this report, or is the product of other States and not properly included in the value of Tennessee minerals.

The cost or value of coal coked is credited to coal values, and should therefore be deducted from coke values.

From gas, gas coke, tar and ammonia should be deducted the value of coal and all other minerals used in its manufacture, for the reason that these values are either included in those of other mineral product reported for Tennessee, or they are from the product of other States and should be excluded from any report purporting to give the mineral product of Tennessee.

The clay mined to be sold by commercial operations in Tennessee is largely consumed in foreign States, but the value of that clay mined and sold to be used in Tennessee in the manufacture of brick and tiling and pottery should be deducted from the total value of clay products.

These duplications of values are as follows:

From Clay products:

Value of Clay mined and sold to be used in Tennessee by manufacturers.....\$ 20,309

From Coke:

Coal used, 896,411 short tons valued at..... 957,111

From Gas, Gas Coke, Tar and Ammonia:

Value of all minerals used..... 266,810

From Pig Iron:

Coke used, 708,314 short tons, valued at..... 2,778,605

Iron Ore used, 902,966 short tons, valued at..... 1,496,772

Limestone (flux) used, 296,173 long tons, valued at..... 166,597

Total deductions to be made from pig iron.....\$4,441,974

Total deductions of duplicate values from all.....\$5,686,204

With the elimination of the duplicated values above set out, the total net value of all clay products amounts to \$1,432,381, the total net value of coke amounts to \$451,192, and the total net value of pig iron amounts to \$2,465,098, and the total net value of all mineral products of Tennessee for 1907 amounts to \$23,302,621.

Brief statistics in *detail* as to coal are as follows:

**COAL.**

Product:	Short Tons.
First district .....	1,809,766
Second district .....	1,626,305
Third district .....	3,504,840
Total product .....	6,940,911
Values:	
First district.....	\$2,234,746
Second district.....	2,022,307
Third district.....	4,225,846
Total values.....	\$8,482,899

## MINING DEPARTMENT OF TENNESSEE.

Average value per ton .....	\$1 22
Net increase in product as compared with 1906 (short tons).....	668,454
Net increase in value as compared with 1906.....	917,613
Draft animals employed:	
Inside .....	1,099
Outside .....	273
Total number draft animals .....	1,372
Value of improvements made during the year:	
Inside .....	\$ 78,785
Outside .....	110,721
Total value of improvements made during the year.....	\$189,506
Total number of kegs of powder used .....	137,934
Total number of pounds of dynamite used .....	130,939
Total number of mine cars in use .....	14,371
Employees:	
Average number inside .....	9,488
Average number outside .....	1,610
Total average number of employees in and around the mines.....	11,098
Average wages paid per day .....	\$2 21
Total amount paid for labor.....	\$5,540,520
Total average number of days active.....	236
Accidents, number of:	
Fatal .....	31
Non-fatal .....	195
Total number of children rendered fatherless.....	51
Total number of wives made widows.....	19
Mining machines in use:	
Pick .....	113
Chain breast .....	24
Total number of mining machines in use.....	137
Total number of firms using mining machines .....	19
Quantity of coal mined with machines (short tons) .....	716,791
Strikes and suspensions:	
Total number of days lost .....	5,125
Total wages lost to employes.....	\$ 10,691
Total loss in coal product (short tons) .....	13,581
Total loss in coal values.....	\$ 16,569

## COAL

The coal fields of Tennessee are embraced in the Appalachian system, which extends from New York on the north to Alabama on the south, having a length north-east and southwest of over 900 miles and a width ranging from thirty to 180 miles.

This system embraces the coal areas of Alabama, Georgia, Kentucky, Maryland, Western Pennsylvania, Ohio, Tennessee, Virginia and West Virginia, embracing an area of 70,807 square miles, underlaid by coal, which in 1906 produced 239,358,520 short tons or 69.8 per cent of the total bituminous product of the United States.

The coal field of Tennessee, containing an approximate area of 4,400 square miles, is divided into three coal districts. The first district comprises the counties of Bledsoe, Cumberland, Fentress, Franklin, Grundy, Marion, Overton, Putnam, Sequatchie, Van Buren and White. The second district comprises the counties of Hamilton, Morgan, Rhea, Roane and Scott, and the third district comprises the counties of Anderson, Campbell and Claiborne.

### COAL PRODUCT.

The coal product of Tennessee for 1907 amounted to 6,940,911 short tons, valued at \$8,482,899, or \$1.22 per ton. As compared with 1906 this is an increase of 668,454 short tons, or 9.63 per cent., and an increase in values of \$917,673, or 10.82 per cent.

In the first district there was an increase in product of 242,910 short tons and an increase in values of \$253,250.

In the second district there was an increase in product of 67,198 short tons and an increase in values of \$98,894.

In the third district there was an increase in product of 358,346 short tons, and an increase in values of \$565,469.

Decreases as to product occurred in the counties of Overton, White and Rhea, while decreases as to values occurred in the counties of Marion, Overton, White, Morgan and Rhea.

The most important increases as to product and values occurred in the counties of Campbell, Claiborne, Grundy and Sequatchie.

These increases are attributed both to new development and extension of the old mines.

Coal product as treated herein embraces the coal marketed by shipment to distant points amounting to 5,935,762 short tons or 85.52 per cent. of total product; coal used for fuel and steam amounting to 122,284 short tons or 1.76 per cent. of total product; coal sold to local trade and employees amounting to 79,578 short tons, or 1.14 per cent. of total product, and coal coked amounting to 803,287 short tons, or 11.58 per cent. of total product.

There was an average of 56,430 short tons of coal produced for each operation, and 37,722 short tons of coal produced for each mine reported active.

## COAL MINED BY MACHINES.

While the use of the undercutting or mining machines in the production of coal has been heretofore increasing from year to year the quantity of coal for 1907 mined with machines amounts to practically the same as for 1906. For 1907 there were 716,791 short tons of coal mined with machines, or 10.33 per cent. of total product. There were nineteen firms using mining machines in nineteen different mines. The number of mining machines in use amounted to 137 as compared with 140 for 1906.

Of the mining machines in use 29 were in the first district, 7 in the second district, and 101 in the third district; 46 are pick Harrison, 56 pick Ingersoll-Sargent, 9 pick Sullivan, and 2 pick other kinds; 11 chain breast, Jeffrey electric, 5 chain breast Sullivan, 5 chain breast Goodman, and 3 chain breast Morgan-Gardner.

For each mining machine in use there were produced 5,232 short tons of coal.

The earliest record of coal mined by machines in Tennessee was in 1898, when 152,002 short tons of coal were so mined, which was 5.03 per cent of the total coal product.

The total machine-mined coal tonnage for 1906 in the United States amounted to 35.1 per cent of the total coal product.

This is more than one-third of the total coal product, and 1.32 per cent. more than for 1905.

The total number of machines in use increased from 9,184 in 1905 to 10,212 in 1906. This is an increase of 1,028, or about 11 per cent.

The percentage of total coal product mined with machines for 1906 by States is as follows: Ohio, the highest, 72.14 per cent; Kentucky, 53.62; Montana, 53.24; Pennsylvania (Bituminous) 41.88; West Virginia, 35.96; Indiana, 35.16; North Dakota, 31.74; Michigan, 30.98; Illinois, 27.93; Wyoming, 21.84; Colorado, 13.22; Alabama, 12.52, and Tennessee, 11.94.

## LABOR.

The total amount paid for labor in and around the coal mines of Tennessee for 1907 is as follows:

First district.....	\$1,542,260
Second district.....	1,312,781
Third district.....	2,685,479
Total .....	<u>\$5,540,520</u>

As compared with 1906 this is an increase of \$696,254, or 14.4 per cent.

The average rate paid per day to all workers in and around the coal mines, inside and outside, amounted to \$2.21, as against \$2.07 for 1906.

For more specific details special reference is made to the table of statistics showing average wages paid per day to all of the various classes of laborers in and around the coal mines, as well as to the many wage scales printed elsewhere in the report. It will be observed from these figures that there has been an increase in average wages paid per day in each class of labor in and around the mines as compared with 1906.

### STRIKES AND SUSPENSIONS.

There were 5,125 days lost during the year on account of strikes. Total loss in wages to employees amounted only to \$10,691; total loss in coal product amounted to 135,811 short tons, and total loss in coal values amounted to \$16,569.

The loss from strikes for the past four or five years has been nearly nominal from all stand points, and the question seems to be practically eliminated.

This is indeed gratifying, and both operator and miner should be congratulated upon such conditions.

There were a number of suspensions and semi-suspensions, and half-time work reported during the year on account of car shortage.

### NEW DEVELOPMENT.

According to reports it is safe to estimate about 50 per cent. of the increase in coal product to be due to new development, while the remainder of the increase is due to the extension of old operations.

The most important of the new development occur in Campbell, Grundy, Scott and White counties.

**FINANCIAL STATEMENT**

The following is a statement of all revenue accruing to the State by virtue of the provisions of the mining laws, and of all disbursements during 1907 by months, accounts and amounts:

Total amount accruing to the State on account of mine inspections.....\$4,799 00  
 Total amount paid to the State by the old Board of Mine Foremen Examiners.. 160 00  
 Total amount paid to the State by the present Board of Mine Foremen Examiners 375 00

Total revenue .....\$5,334 00

*Total Disbursements from January 1, 1907, to December 31, 1907, Inclusive.*

ACCOUNTS	MONTHS						
	Jan.	Feb.	March	April	May	June	July
<b>Salaries:</b>							
Chief Mine Inspector.....	\$183.33	\$183.33	\$ 183.33	\$ 191.66	\$ 200.00	\$200.00	\$ 200.00
District Inspector, East Division....	110.00	110.00	110.00	125.83	141.66	141.66	141.66
District Inspector, Middle Division..	110.00	110.00	110.00	125.83	141.66	141.66	141.66
Dist. Inspector and Statistician....					141.66	141.66	141.66
Clerk .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00
<b>Traveling expenses:</b>							
Chief Mine Inspector.....	119.25	62.85	124.45	97.90	90.75	81.73	89.15
District Inspector, East Division....	45.88	42.25	39.55	38.35	45.10	56.15	28.50
District Inspector, Middle Division	54.68	59.25	30.05	33.85	43.35	51.60	35.20
Clerk .....							4.50
Office exp., blanks, sta., etc.....	31.30	21.05	181.02	103.50	99.66	57.45	63.95
Postage .....	83.50	30.05	29.46	18.00	20.00	12.97	16.10
Mine Inspector's supplies.....		3.00	3.50	7.50	34.15	6.05	43.68
Furniture and fixtures.....							
Printing (annual report), 1906.....							
Board of Mine Foremen Exam's.....				135.10	5.00		
Tabulating annual report, 1906.....			160.00	180.00			
<b>Total .....</b>	<b>\$837.94</b>	<b>\$721.78</b>	<b>\$1,071.36</b>	<b>\$1,157.52</b>	<b>\$1,062.99</b>	<b>\$990.93</b>	<b>\$1,006.06</b>

ACCOUNTS	MONTHS					GRAND TOTAL
	Aug.	Sept.	October	Nov.	Dec.	
<b>Salaries:</b>						
Chief Mine Inspector .....	\$200 00	\$200 00	\$ 200 00	\$ 200 00	\$ 200 00	\$ 2,341 65
District Inspector, East Division..	141 66	141 66	141 66	141 66	141 66	1,589 11
District Inspector, Middle Div....	141 66	141 66	141 66	141 66	141 66	1,589 11
District Inspector and Statistician.	141 66	141 66	141 66	141 66	141 66	1,133 28
Clerk .....	100 00	100 00	100 00	100 00	100 00	1,200 00
<b>Traveling expenses:</b>						
Chief Mine Inspector.....	79 80	108 50	109 75	58 20	95 50	1,117 83
District Inspector, East Division..	53 20	48 25	54 00	58 50	52 20	561 93
District Inspector, Middle Div....	44 45	31 50	39 55	64 45	56 15	544 08
District Inspector and Statistician.		17 25				17 25
Clerk .....						4 50
Office expenses, blanks, sta., etc....	76 95	23 25	22 20	149 20	178 80	1,008 33
Postage .....	12 00	19 00	15 80	30 00	54 50	341 38
Mine Inspectors' supplies .....	3 00	16 90	1 25		4 30	123 33
Furniture and Fixtures.....					50 00	50 00
Printing (annual report, 1906).....					494 00	494 00
Board of Mine Foremen Exam-						
inations .....			123 61			263 71
Tabulating annual report (1906)....						340 00
<b>Total .....</b>	<b>\$994 38</b>	<b>\$989 63</b>	<b>\$1,091 14</b>	<b>\$1,085 33</b>	<b>\$1,710 43</b>	<b>\$12,719 49</b>

### MINE INSPECTIONS FOR 1907 IN DETAIL

The following statement shows all mine inspections in detail for the year 1907, giving fees due the State from each operator as provided by existing law:

#### *Mine Inspections for 1907 in Detail.*

OPERATORS		MINES		FEE	TOTAL FEES
COUNTY AND NAME	POSTOFFICE	NAME	DATE INSPECTED		
<b>Bledsoe County</b>					
Atpontley Coal Co....	Atpontley .....	Atpontley 1.....	Aug. 9 ..	\$ 20 00	
Atpontley Coal Co....	Atpontley .....	Atpontley 5.....	Aug. 9 ..	10 00	\$ 30 00
<b>Cumberland County</b>					
Clear Creek Coal Co...	Isoline .....	Clear Creek .....	June 14	20 00	20 00
Fall Creek Collieries..	Ozone .....	Fall Creek .....	April 19	20 00	
Fall Creek Collieries..	Ozone .....	Fall Creek .....	Nov. 20	20 00	40 00
Renfro Coal & C. Co...	Renfro .....	Renfro .....	Nov. 19	15 00	15 00
Waldensia C. & C. Co.	Waldensia .....	Waldensia .....	April 10	3 50	
Waldensia C. & C. Co.	Waldensia .....	Waldensia .....	Nov. 21	25 00	28 50
<b>Fentress County</b>					
Fentress C. & C. Co...	Wilder .....	Wilder 1.....	April 16	35 00	
Fentress C. & C. Co...	Wilder .....	Wilder 1.....	Nov. 13	30 00	
Fentress C. & C. Co...	Wilder .....	Wilder 2.....	Nov. 13	20 00	85 00
<b>Grundy County</b>					
Flat Branch Coal Co...	Tracy City ...	Flat Branch .....	Feb. 13	2 50	2 50
Gem Coal Co.....	Tracy City ...	Rust .....	Feb. 13	2 50	2 50
Nunley Ridge Coal Co.	Tracy City ...	Brushy Ridge .....	July 9, 10	30 00	
Nunley Ridge Coal Co.	Tracy City ...	Roddy Springs 2...	July 9 ...	15 00	45 00
Sewanee C., C. & L. Co.	Coalmont .....	B .....	Feb. 14	3 50	
Sewanee C., C. & L. Co.	Coalmont .....	B .....	Dec. 17	20 00	
Sewanee C., C. & L. Co.	Coalmont .....	H .....	Feb. 14	3 50	
Sewanee C., C. & L. Co.	Coalmont .....	H .....	Dec. 17	20 00	
Sewanee C., C. & L. Co.	Coalmont .....	K .....	Dec. 17	10 00	
Sewanee C., C. & L. Co.	Coalmont .....	M .....	July 9 ..	20 00	
Sewanee C., C. & L. Co.	Coalmont .....	N .....	July 9 ..	15 00	92 00
Tenn. Con. Coal Co...	Tracy City ...	Ramsey 1, 2, 3....	Feb. 12	12 50	
Tenn. Con. Coal Co...	Tracy City ...	Ramsey .....	July 11	35 00	
Tenn. Con. Coal Co...	Tracy City ...	Reid Hill .....	Feb. 11	12 50	
Tenn. Con. Coal Co...	Tracy City ...	Reid Hill .....	July 11	35 00	
Tenn. Con. Coal Co...	Tracy City ...	Reid Hill .....	Dec. 18	35 00	
Tenn. Con. Coal Co...	Tracy City ...	Street Hill .....	July 12 ..	10 00	140 00
<b>Marion County</b>					
Battle Cr'k C. & C. Co.	Orme .....	Battle Creek .....	Aug. 6 ..	35 00	
Battle Cr'k C. & C. Co.	Orme .....	Battle Creek .....	Dec. 20	35 00	70 00
New Etna Coal Co....	Chattanooga ...	Etna 1 .....	Feb. 26	12 50	12 50
Tenn. C., I. & R. R. Co.	Birmingham, A.	Thomas 1-2.....	April 4, 5	12 50	
Tenn. C., I. & R. R. Co.	Birmingham, A.	Thomas 1-2.....	Aug. 7 .	35 00	
Tenn. C., I. & R. R. Co.	Birmingham, A.	Thomas 5 .....	April 5 ..	5 00	
Tenn. C., I. & R. R. Co.	Birmingham, A.	Thomas 5 .....	Aug. 7 ..	25 00	77 50
<b>Overton County</b>					
Brier Hill Collieries...	Crawford .....	Brier Hill 1.....	April 17	25 00	
Brier Hill Collieries...	Crawford .....	Brier Hill 1.....	Nov. 14	25 00	
Brier Hill Collieries...	Crawford .....	Brier Hill 2.....	April 17	15 00	

*Mine Inspection for 1907 in Detail.—Continued.*

OPERATORS		MINES		FEE	TOTAL FEES
COUNTY AND NAME	POSTOFFICE	NAME	DATE INSPECTED		
<i>Overton County—Continued</i>					
Brier Hill Collieries...	Crawford .....	Brier Hill 2.....	Nov. 14	\$ 20 00	\$ 85 00
Obey City Coal Co.....	Obey City .....	Obey City .....	April 18	20 00	
Obey City Coal Co.....	Obey City .....	Obey City .....	Nov. 27	20 00	40 00
Peacock Coal & C. Co.	Cliff Springs ..	Peacock .....	April 18 ..	10 00	10 00
<i>Sequatchie County</i>					
Southern Steel Co.....	Dunlap .....	Douglass 2 .....	May 16 ..	35 00	
Southern Steel Co.....	Dunlap .....	Douglass 2 .....	Aug. 8 ...	35 00	70 00
<i>White County</i>					
Bon Air C. & Iron Co..	Nashville .....	Bon Air 6 .....	June 12 ..	35 00	
Bon Air C. & Iron Co..	Nashville .....	Bon Air 6 .....	Dec. 10 ..	35 00	
Bon Air C. & Iron Co..	Nashville .....	Eastland .....	June 11 ..	35 00	
Bon Air C. & Iron Co..	Nashville .....	Eastland .....	Dec. 11 ..	35 00	
Bon Air C. & Iron Co..	Nashville .....	Ravenscroft .....	June 10 ..	35 00	
Bon Air C. & Iron Co..	Nashville .....	Ravenscroft .....	Dec. 12 ..	35 00	210 00
Clifty Creek Coal Co..	Clifty .....	Clifty Creek 1 .....	June 12 ..	35 00	
Clifty Creek Coal Co..	Clifty .....	Clifty Creek 1 .....	Dec. 11 ...	35 00	70 00
Total First District.	.....	.....	.....	\$1,145 50	\$1,145 50
<i>Hamilton County</i>					
Lewis & Hatfield.....	Soddy R. R. 2..	Lewis & Hatfield..	Nov. 25 ..	\$ 10 00	\$ 10 00
Montlake Coal Co.....	Chattanooga ...	Montlake .....	April 1 ...	5 00	
Montlake Coal Co.....	Chattanooga ...	Montlake 1 .....	Nov. 25 ..	25 00	
Montlake Coal Co.....	Chattanooga ...	Montlake 2 .....	Nov. 25 ..	15 00	45 00
New Soddy Coal Co..	Chattanooga ...	Big Soddy 1.....	Nov. 5 ...	25 00	
New Soddy Coal Co..	Chattanooga ...	Soddy 1 .....	May 28 ..	35 00	
New Soddy Coal Co..	Chattanooga ...	Soddy 5 .....	May 27 ..	15 00	
New Soddy Coal Co..	Chattanooga ...	Soddy 3 (Jenkins).	May 27 ..	15 00	
New Soddy Coal Co..	Chattanooga ...	Soddy 4 (Davis)...	May 27 ..	20 00	110 00
Sale Creek Coal Co....	Sale Creek .....	Sale Creek .....	March 15	10 00	10 00
<i>Morgan County</i>					
Big Brushy C. & C. Co.	Petros .....	Big Brushy 1-2....	June 18 ..	35 00	
Big Brushy C. & C. Co.	Petros .....	Big Brushy 1-2....	Oct. 29 ...	30 00	
Big Brushy C. & C. Co.	Petros .....	Big Brushy 1-2....	Nov. 8 ...	30 00	95 00
Big Mt. Coal Co.....	Oliver Springs.	Blizzard .....	June 5 ...	15 00	
Big Mt. Coal Co.....	Oliver Springs.	Blizzard .....	Aug. 8 ...	15 00	
Big Mt. Coal Co.....	Oliver Springs.	Blizzard .....	Nov. 11 ..	15 00	45 00
Blue Gem Coal Co.....	Blue Gem .....	Blue Gem .....	Nov. 9 ...	5 00	5 00
H. B. Bowling Coal Co.	Coalfield .....	Bowling 1 .....	June 19 ..	25 00	
H. B. Bowling Coal Co.	Coalfield .....	Bowling 1 .....	Dec. 6 ...	25 00	
H. B. Bowling Coal Co.	Coalfield .....	Bowling 1 .....	Dec. 24 ..	25 00	
H. B. Bowling Coal Co.	Coalfield .....	Bowling 2 .....	June 19 ..	20 00	
H. B. Bowling Coal Co.	Coalfield .....	Bowling 2 .....	Nov. 7 ...	15 00	110 00
Butler Coal Mining Co.	Oliver Springs..	Butler 2 .....	June 6 ...	30 00	
Butler Coal Mining Co.	Oliver Springs..	Butler 2 .....	Aug. 7 ...	25 00	55 00
Little Brushy Coal Co.	Coalfield .....	Little Brushy ....	June 19 ..	20 00	20 00
Poplar Creek Coal Co..	Oliver Springs..	Big Mt. ....	June 5 ...	20 00	
Poplar Creek Coal Co..	Oliver Springs..	Big Mt. ....	Aug. 8 ...	20 00	
Poplar Creek Coal Co..	Oliver Springs..	Big Mt. ....	Nov. 11 ..	20 00	60 00
Prudential Coal Co....	Oliver Springs..	Prudential .....	June 6 ...	10 00	10 00

*Mine Inspection for 1907 in Detail.—Continued.*

OPERATORS		MINES		FEE	TOTAL FEES
COUNTY AND NAME	POSTOFFICE	NAME	DATE INSPECTED		
<i>Morgan County—Continued.</i>					
State of Tennessee....	Nashville .....	Brushy Mt. 1 .....	Feb. 19 ..	No fee	No fee
State of Tennessee....	Nashville .....	Brushy Mt. 1 .....	Feb. 20 ..	\$15 00	
State of Tennessee....	Nashville .....	Brushy Mt. 1 .....	July 1 ...	35 00	
State of Tennessee....	Nashville .....	Brushy Mt. 1 .....	July 30 ...	35 00	
State of Tennessee....	Nashville .....	Brushy Mt. 1 .....	Oct. 9 ...	35 00	
State of Tennessee....	Nashville .....	Brushy Mt. 3 .....	Feb. 19 ...	15 00	
State of Tennessee....	Nashville .....	Brushy Mt. 3 .....	Feb. 20 ..	15 00	
State of Tennessee....	Nashville .....	Brushy Mt. 3 .....	July 29 ...	35 00	
State of Tennessee....	Nashville .....	Brushy Mt. 3 .....	Oct. 10 ...	35 00	\$ 220 00
<i>Rhea County</i>					
Dayton Coal & Iron Co.	Dayton .....	Nelson .....	March 14 ..	2 50	
Dayton Coal & Iron Co.	Dayton .....	Nelson .....	April 23 ..	20 00	
Dayton Coal & Iron Co.	Dayton .....	Nelson .....	Aug. 14 ..	20 00	
Dayton Coal & Iron Co.	Dayton .....	Richland .....	Jan. 12 ...	10 00	
Dayton Coal & Iron Co.	Dayton .....	Richland .....	May 4 ...	30 00	
Dayton Coal & Iron Co.	Dayton .....	Richland .....	Dec. 14 ...	35 00	
Dayton Coal & Iron Co.	Dayton .....	Richland 14 .....	May 4 ...	10 00	127 50
Fox Coal Co.....	Montague .....	Fox 1 .....	Jan. 17 ...	5 00	
Fox Coal Co.....	Montague .....	Fox 1 .....	June 28 ..	20 00	
Fox Coal Co.....	Montague .....	Fox 2 .....	Jan. 17 ...	10 00	
Fox Coal Co.....	Montague .....	Fox 2 .....	June 28 ..	35 00	70 00
<i>Roane County</i>					
Emory Gap Coal Co...	Emory Gap ...	Domestic 1 .....	July 5 ...	20 00	20 00
Roane Iron Co.....	Rockwood .....	Old .....	March 6 ...	15 00	
Roane Iron Co.....	Rockwood .....	Old .....	June 25 ...	35 00	
Roane Iron Co.....	Rockwood .....	Old .....	Dec. 5 ...	35 00	85 00
<i>Scott County</i>					
Glen Mary C. & C. Co.	Glen Mary .....	Glen Mary 2-4 ....	Jan. 24 ..	5 00	
Glen Mary C. & C. Co.	Glen Mary .....	Glen Mary 2-4 ....	Aug. 26 ..	30 00	
Glen Mary C. & C. Co.	Glen Mary .....	Glen Mary 5 .....	Aug. 26 ..	20 00	55 00
Oneida Coal Co.....	Oneida .....	Terry 1 .....	Aug. 5 ...	15 00	
Oneida Coal Co.....	Oneida .....	Terry 2 .....	Aug. 5 ...	10 00	
Oneida Coal Co.....	Oneida .....	Terry 4 .....	Aug. 5 ...	15 00	40 00
Paint Rock C. Min. Co.	Almy .....	Paint Rock 2 .....	Jan. 22 ...	2 50	
Paint Rock C. Min. Co.	Almy .....	Paint Rock 3 .....	Jan. 22 ...	3 50	
Paint Rock C. Min. Co.	Almy .....	Paint Rock 3 .....	May 30 ...	25 00	31 00
Total Second District	.....	.....	.....	\$1,223 50	\$1,223 50
<i>Anderson County</i>					
Andy's Ridge Coal Co.	Brierville .....	Andiers Ridge ...	Oct. 5 ...	\$ 15 00	\$ 15 00
Black Diamond C. Co.	Knoxville .....	Black Diamond 1..	April 3 ...	35 00	
Black Diamond C. Co.	Knoxville .....	Black Diamond 1..	Aug. 6 ...	35 00	
Black Diamond C. Co.	Knoxville ...	Black Diamond 5..	April 15 ...	35 00	
Black Diamond C. Co.	Knoxville .....	Black Diamond 5..	Oct. 3 ...	35 00	140 00
Campbell Coal M. Co..	Oliver Springs..	Campbell 1 .....	June 7 ...	10 00	
Campbell Coal M. Co..	Oliver Springs..	Campbell 2 .....	June 7 ...	10 00	
Campbell Coal M. Co..	Oliver Springs..	Campbell 3 .....	June 7 ...	20 00	40 00
Coal Creek Coal Co...	Coal Creek.....	Fraterville 1 .....	April 9 ...	35 00	
Coal Creek Coal Co...	Coal Creek.....	Fraterville 1 .....	Oct. 2 ...	35 00	

*Mine Inspection for 1907 in Detail.—Continued.*

OPERATORS		MINES		FEE	TOTAL FEES
COUNTY AND NAME	POSTOFFICE	NAME	DATE INSPECTED		
Anderson County—Con.					
Coal Creek Coal Co...	Coal Creek.....	Thistle .....	April 10 ..	\$ 25 00	
Coal Creek Coal Co...	Coal Creek.....	Thistle .....	Aug. 12 ..	30 00	\$ 125 00
Knoxville Iron Co....	Knoxville .....	Cross Mt. 1 .....	April 4 ...	25 00	
Knoxville Iron Co....	Knoxville .....	Cross Mt. 1 .....	July 10 ...	30 00	55 00
Royal Coal & Coke Co.	Knoxville .....	Brookside .....	April 12 ..	20 00	
Royal Coal & Coke Co.	Knoxville .....	Brookside .....	July 18 ...	25 00	
Royal Coal & Coke Co.	Knoxville .....	Eureka 1 .....	July 18 ...	20 00	
Royal Coal & Coke Co.	Knoxville .....	Eureka 2 .....	April 12 ..	20 00	
Royal Coal & Coke Co.	Knoxville .....	Eureka 3 .....	April 12 ..	5 00	
Royal Coal & Coke Co.	Knoxville .....	Eureka 3 .....	July 18 ...	5 00	95 00
Tennessee Coal Co....	Knoxville .....	Tennessee 1 .....	April 8 ...	25 00	
Tennessee Coal Co....	Knoxville .....	Tennessee 1 .....	July 11 ...	25 00	
Tennessee Coal Co....	Knoxville .....	Tennessee 2 .....	April 8 ...	25 00	
Tennessee Coal Co....	Knoxville .....	Tennessee 2 .....	July 11 ...	25 00	
Tennessee Coal Co....	Knoxville .....	Tennessee 2 .....	Nov. 26 ..	25 00	125 00
Windrock C. & C. Co..	Windrock .....	Windrock 1 .....	June 4 ...	35 00	
Windrock C. & C. Co..	Windrock .....	Windrock 1 .....	Aug. 9 ...	35 00	
Windrock C. & C. Co..	Windrock .....	Windrock 1 .....	Nov. 2 ...	35 00	105 00
Campbell County					
Bear Wallow C.&C.Co.	Careyville .....	Bear Wallow .....	Nov. 20 ...	5 00	5 00
Big Block Coal Co....	Cupp .....	Big Block .....	July 1 ...	15 00	15 00
Black Gem Coal Co....	Careyville .....	Black Gem .....	July 22 ...	5 00	
Black Gem Coal Co....	Careyville .....	Black Gem .....	Nov. 20 ...	5 00	10 00
Block Coal & Coke Co.	Block .....	Block 1 .....	June 25 ...	20 00	
Block Coal & Coke Co.	Block .....	Block 2 .....	June 25 ...	10 00	30 00
Blue Gem Coal Co....	Jellico .....	Speed B. G. Seam..	May 14 ...	20 00	
Blue Gem Coal Co....	Jellico .....	Speed Jel Seam....	May 14 ...	15 00	35 00
Campbell Coal M. Co...	Westbourne ..	Jackson .....	April 22 ..	25 00	
Campbell Coal M. Co...	Westbourne ..	Jackson .....	Oct. 21 ...	30 00	55 00
Careyville Coal Co....	Careyville .....	Bowling .....	Oct. 7 ...	25 00	25 00
Chaska Coal Co....	Chaska .....	Chaska .....	April 24 ...	25 00	
Chaska Coal Co....	Chaska .....	Chaska .....	Oct. 22 ...	25 00	50 00
Davis Creek Coal Co...	Cupp .....	Davis Creek .....	April 24 ...	20 00	
Davis Creek Coal Co...	Cupp .....	Davis Creek .....	Oct. 22 ...	25 00	45 00
Evans Coal Co....	Jellico .....	Evans B. G. ....	May 14 ...	15 00	15 00
Falls Branch Coal Co...	Wooldridge ...	Falls Branch .....	Oct. 24 ...	25 00	
Falls Branch Coal Co...	Wooldridge ...	Powhatton .....	May 15 ...	20 00	
Falls Branch Coal Co...	Wooldridge ...	Powhatton .....	Oct. 24 ...	20 00	65 00
Italian B. G. Coal Co...	Newcomb .....	Italian B. G. ....	May 13 ...	20 00	20 00
Italy Coal Co....	Cupp .....	Italy .....	July 19 ...	15 00	
Italy Coal Co....	Cupp .....	Italy .....	Oct. 21 ...	15 00	30 00
Jellico B. G. Coal Co...	Jellico .....	Jameson B. G. S...	May 13 ...	20 00	
Jellico B. G. Coal Co...	Jellico .....	Jameson Jel. Seam	May 13 ...	20 00	40 00
Jellico Powder Co....	Jellico .....	Tenn. B.G.(Owens)	Oct. 24 ...	5 00	5 00
Kimberly Coal Co....	Cupp .....	Kimberly .....	April 2 ...	30 00	
Kimberly Coal Co....	Cupp .....	Kimberly .....	Oct. 10 ...	25 00	55 00
LaFollette C.,I. & R. Co.	LaFollette .....	Peabody .....	Oct. 11 ...	20 00	
LaFollette C.,I. & R. Co.	LaFollette .....	Rex 1 .....	April 25 ...	35 00	
LaFollette C.,I. & R. Co.	LaFollette .....	Rex 1 .....	July 8 ...	35 00	

## Mine Inspection for 1907 in Detail.—Continued.

OPERATORS		MINES		FEE	TOTAL FEES
COUNTY AND NAME	POSTOFFICE	NAME	DATE INSPECTED		
Campbell County—Con.					
LaFollette C.,I. & R. Co.	LaFollette .....	Rex 1 .....	Nov. 20 ..	\$ 35 00	
LaFollette C.,I. & R. Co.	LaFollette .....	Rex 2 .....	May 10 ..	35 00	
LaFollette C.,I. & R. Co.	LaFollette .....	Rex 2 .....	Aug. 28 ..	35 00	\$ 195 00
T. S. Owens .....	Jellico .....	Owens (Tenn. B.G.)	May 15 ...	5 00	5 00
Proctor Coal Co.....	Red Ash, Ky....	Indian Mt. ....	May 16 ...	30 00	
Proctor Coal Co.....	Red Ash, Ky....	Indian Mt. ....	Oct. 25 ...	20 00	50 00
Rector Coal Co.....	Titus .....	Rector .....	Oct. 9 ...	20 00	20 00
Red Ash Coal Co. ....	Careyville .....	Red Ash .....	June 24 ...	20 00	20 00
Remy Coal Co.....	Gatliff .....	Remy .....	July 19 ...	15 00	15 00
Rich Mt. Coal & C. Co.	Bennett .....	Rich Mt. ....	April 2 ...	15 00	
Rich Mt. Coal & C. Co.	Bennett .....	Rich Mt. ....	Oct. 23 ...	20 00	35 00
Royal Coal & Coke Co.	Knoxville .....	Cambria .....	March 21 ...	25 00	
Royal Coal & Coke Co.	Knoxville .....	Cambria .....	June 27 ...	25 00	
Royal Coal & Coke Co.	Knoxville .....	Cambria .....	Nov. 25 ...	25 00	75 00
L. P. Smith.....	Jellico .....	Smith & Smith ...	July 17 ...	10 00	10 00
Southern C. & C. Co.	Gatliff .....	Southern 1 .....	July 1 ...	20 00	
Southern C. & C. Co.	Gatliff .....	Southern 2 .....	July 1 ...	20 00	40 00
Sunshine Coal Co	Jellico .....	Sunshine B. G.....	May 15 ...	5 00	
Sunshine Coal Co. ....	Jellico .....	Sunshine B. G.....	Oct. 24 ...	5 00	10 00
Tenn-Jellico Coal Co.	Jellico .....	Tenn.-Jellico .....	May 7 ...	20 00	20 00
Westbourne Coal Co...	Westbourne ...	Westbourne .....	April 22 ...	25 00	
Westbourne Coal Co.	Westbourne ...	Westbourne .....	Oct. 21 ...	25 00	50 00
Wooldridge-Jellico C. C.	Wooldridge ....	Mary-Anna .....	July 16 ...	30 00	30 00
Claiborne County					
Bryson Mt. C. & C. Co.	Hartranft .....	Bryson Mt. 1 .....	June 14 ...	35 00	
Bryson Mt. C. & C. Co.	Hartranft .....	Bryson Mt. 1 .....	Dec. 9 ...	30 00	
Bryson Mt. C. & C. Co.	Hartranft .....	Bryson Mt. 2 .....	June 14 ...	10 00	75 00
Fork Ridge C. & C. Co.	Middlesboro, Ky	Fork Ridge(Fan.S.)	June 13 ...	25 00	
Fork Ridge C. & C. Co.	Middlesboro, Ky	Fork Ridge(Fan.S.)	Dec. 10 ...	30 00	
Fork Ridge C. & C. Co.	Middlesboro, Ky	F'k Ridge(SlopeS.)	June 13 ...	25 00	
Fork Ridge C. & C. Co.	Middlesboro, Ky	F'k Ridge(SlopeS.)	Dec. 10 ...	25 00	105 00
King Mt. Coal Co.....	Clairfield .....	King Mt. ....	May 7 ...	15 00	15 00
Mingo Coal & Coke Co.	Middlesboro, Ky	Mingo 2 .....	June 12 ...	20 00	20 00
Nicholson Coal Co.....	Middlesboro, Ky	Nicholson 2 .....	June 18 ...	25 00	
Nicholson Coal Co.....	Middlesboro, Ky	Nicholson 2 .....	Dec. 12 ...	25 00	
Nicholson Coal Co.....	Middlesboro, Ky	Nicholson 3 .....	June 18 ...	20 00	
Nicholson Coal Co.....	Middlesboro, Ky	Nicholson 3 .....	Dec. 12 ...	20 00	90 00
Pruden Coal & Coke Co.	Pruden .....	Pruden .....	May 6 ...	25 00	25 00
Reliance Coal & C. Co.	Hartranft .....	Reliance 1-2 .....	June 12 ...	20 00	
Reliance Coal & C. Co.	Hartranft .....	Reliance 2 .....	Dec. 11 ...	15 00	35 00
Rogers Coal Co.....	Clairfield .....	Rogers .....	May 7 ...	15 00	15 00
Sterling Coal & C. Co.	Middlesboro, Ky	Sterling .....	June 11 ...	35 00	
Sterling Coal & C. Co.	Middlesboro, Ky	Sterling .....	Dec. 9 ...	30 00	65 00
Yellow Creek Coal Co.	Bosworth, Ky...	Yellow Creek 2 ...	June 18 ...	25 00	
Yellow Creek Coal Co.	Bosworth, Ky...	Yellow Creek 2 ...	Dec. 12 ...	25 00	
Yellow Creek Coal Co.	Bosworth, Ky...	Yellow Creek 3 ...	June 18 ...	25 00	
Yellow Creek Coal Co.	Bosworth, Ky...	Yellow Creek 3 ...	Dec. 12 ...	20 00	95 00
Total Third District .....				\$2,315 00	\$2,315 00
Grand total due the State from Coal Mine Inspections, 1907 .....				\$4,684 00	\$4,684 00

*Mine Inspection for 1907 in Detail.—Continued.***IRON ORE MINE INSPECTIONS, 1907**

OPERATORS		MINES		FEE	TOTAL FEES
COUNTY AND NAME	POSTOFFICE	NAME	DATE INSPECTED		
Roane County					
Brown Mining Co.....	Cardiff .....	Baker Slope .....	June 4 ...	\$ 30 00	
Brown Mining Co.....	Cardiff .....	Cardiff Slope .....	June 5 ...	25 00	
Brown Mining Co.....	Cardiff .....	Carter Slope .....	June 4 ..	20 00	
Brown Mining Co.....	Cardiff .....	Patton Slope .....	June 5 ...	20 00	
Brown Mining Co.....	Cardiff .....	Wright Slope .....	June 5 ...	20 00	\$ 115 00
Total fees due the State from Iron Ore Inspections, 1907.....				\$ 115 00	\$ 115 00
Grand total fees due the State from all Mine Inspections.....				\$4,799 00	\$4,799 00

# COAL MINES IN TENNESSEE, JANUARY 1, 1908

This statement gives name and location of all coal mines in Tennessee, January 1, 1908, together with names and postoffice address of superintendents arranged alphabetically by counties and mines.

*Name and Post Office Address of Coal Mines and Superintendents in Tennessee, January 1, 1908.*

No.	MINE		SUPERINTENDENT		No.
	COUNTY AND NAME	POSTOFFICE	NAME	POSTOFFICE	
Anderson County					
1	Anaers Ridge .....	Briceville .....	William Tuttle ...	Briceville .....	1
2	Big Three .....	Oliver Springs ..	R. P. Walls .....	Oliver Springs....	2
3	Black Diamond 1 .....	Coal Creek .....	L. F. Card .....	Coal Creek .....	3
4	Black Diamond 5 .....	Coal Creek .....	L. F. Card .....	Coal Creek .....	4
5	Black Diamond 6 .....	Briceville .....	John Jeffers .....	Briceville .....	5
6	Brookside .....	Pless .....	G. W. Card .....	Pless .....	6
7	Buck Mt. ....	Pless .....	G. W. Card .....	Pless .....	7
8	Campbell 1 .....	Oliver Springs ..	W. H. Seinknecht.	Oliver Springs ..	8
9	Campbell 2 .....	Oliver Springs ..	W. H. Seinknecht.	Oliver Springs ..	9
10	Campbell 3 .....	Oliver Springs ..	W. H. Seinknecht.	Oliver Springs ..	10
11	Cross Mt. 1.....	Briceville .....	P. F. Lynch .....	Briceville .....	11
12	Cross Mt. 3.....	Briceville .....	P. F. Lynch .....	Briceville .....	12
13	Eureka 2 .....	Pless .....	G. W. Card .....	Pless .....	13
14	Fraterville 1 .....	Coal Creek .....	G. M. Camp .....	Coal Creek .....	14
15	Middle Ridge .....	Briceville .....	E. F. Buffat .....	Briceville .....	15
16	Riding .....	Briceville .....	D. J. Ridings .....	Briceville .....	16
17	Smith .....	Coal Creek .....	W. T. Smith .....	Coal Creek .....	17
18	Tennessee .....	Briceville .....	E. F. Buffat .....	Briceville .....	18
19	Thistle 1 .....	Coal Creek .....	G. M. Camp .....	Coal Creek .....	19
20	Thistle 2 .....	Coal Creek .....	G. M. Camp .....	Coal Creek .....	20
21	Windrock 1 .....	Windrock .....	C. H. Thompson..	Windrock .....	21
Bledsoe County					
22	Atpontley 1.....	Atpontley .....	C. B. Finley .....	Atpontley .....	22
23	aAtpontley 5 .....	Atpontley .....	C. B. Finley .....	Atpontley .....	23
Campbell County					
24	Bear Wallow .....	Careyville .....	H. B. Bowling ...	Careyville .....	24
25	Big Block .....	Cupp .....	Van M. Davis....	Cupp .....	25
26	Black Gem .....	Careyville .....	S. A. Woods .....	Careyville .....	26
27	Block 1 .....	Block .....	R. Bennett .....	Block .....	27
28	Block 2 .....	Block .....	R. Bennett .....	Block .....	28
29	Bowling .....	Careyville .....	J. H. Bowling ...	Careyville .....	29
30	Brummet .....	Newcomb .....	G. W. Davis .....	Newcomb .....	30
31	Cambria 1 .....	Pless .....	G. W. Card .....	Pless .....	31
32	Chaska .....	Chaska .....	F. B. Cooley, Sr. .	Chaska .....	32
33	Davis Creek .....	Cupp .....	John Zochi .....	Cupp .....	33
34	Elk Hart .....	Elk Valley .....	A. S. Lindsay ...	Elk Valley .....	34
35	Elk Valley J. S. 1 .....	Elk Valley .....	Geo. L. Bell .....	Elk Valley .....	35
36	Elk Valley J. S. 2.....	Elk Valley .....	Geo. L. Bell .....	Elk Valley .....	36

a—New mines.

*Coal Mines and Superintendents in Tennessee, January 1, 1908.—Continued.*

No.	MINE		SUPERINTENDENT		No.
	COUNTY AND NAME	POSTOFFICE	NAME	POSTOFFICE	
	<i>Campbell County—Continued.</i>				
37	Elk Valley Splint S.....	Elk Valley ....	Geo. L. Bell .....	Elk Valley .....	37
38	Evans .....	Jellico .....	J. P. Gorman .....	Jellico .....	38
39	Falls Branch .....	Wooldridge .....	Wm. Dinkelaker..	Wooldridge .....	39
40	Gem .....	Peabody .....	Harry Wynn .....	LaFollette .....	40
41	Indian Mt. 1 .....	Jellico .....	John Burns .....	Red Ash, Ky.....	41
42	Indian Mt. 2 .....	Jellico .....	John Burns .....	Red Ash, Ky.....	42
43	Italian B. G. ....	Newcomb .....	Peter Zechini .....	Newcomb .....	43
44	Italy .....	Cupp .....	Thomas Zechini ..	Cupp .....	44
45	Jackson .....	Westbourne .....	J. M. Freeman....	Westbourne .....	45
46	Jameson B. G. ....	Jellico .....	J. T. Bradley.....	Jellico .....	46
47	Kent .....	LaFollette .....	Harry Wynn .....	LaFollette .....	47
48	Kimberly .....	Cupp .....	W. R. Griffin.....	Cupp .....	48
49	aLayne .....	Newcomb .....	M. H. Layne .....	Newcomb .....	49
50	Lone Mt. ....	Newcomb .....	Sam Marion .....	Newcomb .....	50
51	aMary-Anna.....	Wooldridge .....	Wm. Dinkelaker ..	Wooldridge .....	51
52	aMetta .....	Elk Valley ....	M. B. Redman .....	Jacksboro .....	52
53	Morley .....	Morley .....	Charles Walls ....	Morley .....	53
54	Powhattan .....	Wooldridge .....	Wm. Dinkelaker..	Wooldridge .....	54
55	Rector .....	Titus .....	C. B. McBee .....	Titus .....	55
56	Red Ash .....	Careyville .....	T. D. Richards....	Careyville .....	56
57	Remy .....	Gatliff .....	J. D. Wheeler ....	Gatliff .....	57
58	Rex 1 .....	LaFollette .....	Harry Wynn .....	LaFollette .....	58
59	Rex 2 .....	LaFollette .....	Harry Wynn .....	LaFollette .....	59
60	Rich Mt. 1 .....	Bennett .....	L. H. Wallace .....	Bennett .....	60
61	Rich Mt. 2 .....	Bennett .....	L. H. Wallace .....	Bennett .....	61
62	Royal (old) .....	Deposit .....	G. W. Card .....	Pless .....	62
63	aRussell .....	Newcomb .....	J. F. Russell .....	Newcomb .....	63
64	Smith .....	Jellico .....	C. M. Woodward..	Jellico .....	64
65	Southern 1 .....	Gatliff .....	D. W. Davies .....	Gatliff .....	65
66	Southern 2 .....	Gatliff .....	D. W. Davies.....	Gatliff .....	66
67	Speed B. G. ....	Jellico .....	J. F. MacPherson ..	Jellico .....	67
68	aSunshine.....	Jellico .....	W. G. Bradford....	Jellico .....	68
69	aTenn. B. G. ....	Jellico .....	W. M. Comer.....	Jellico .....	69
70	Tenn.-Jellico .....	Anthras .....	John P. Gorman..	Jellico .....	70
71	Westbourne 1-2 .....	Westbourne .....	Joe Graef .....	Westbourne .....	71
72	Woodward .....	Jellico .....	C. M. Woodward..	Jellico .....	72
73	Wooldridge .....	Wooldridge .....	Wm. Dinkelaker..	Wooldridge .....	73
74	Zechini .....	Newcomb .....	Thomas Zechini ..	Newcomb .....	74
	<i>Clatsborne County.</i>				
75	Bryson Mt. 1 .....	Hartranft .....	J. H. Keeney ....	Hartranft .....	75
76	Bryson Mt. 2 .....	Hartranft .....	J. H. Keeney ....	Hartranft .....	76
77	Buffalo .....	Anthras .....	H. G. Vanhooose..	Anthras .....	77
78	Fork Ridge 1 .....	Fork Ridge.....	A. H. Rennebaum..	Fort Ridge .....	78
79	Fork Ridge 2 .....	Fork Ridge.....	A. H. Rennebaum..	Fork Ridge .....	79
80	Fork Ridge 3 .....	Fork Ridge.....	A. H. Rennebaum..	Fork Ridge .....	80
81	King Mt. ....	Clairfield .....	W. S. Grant .....	Clairfield .....	81
82	Mingo 1 .....	Hartranft .....	R. L. Ralston ....	Hartranft .....	82

a—New mines.      b—Not active.

*Coal Mines and Superintendents in Tennessee, January 1, 1908.—Continued.*

No.	MINE		SUPERINTENDENT		No.
	COUNTY AND NAME	POSTOFFICE	NAME	POSTOFFICE	
Claiborne County—Con.					
83	Mingo 2 .....	Hartranft .....	R. L. Ralston ....	Hartranft .....	83
84	Mingo 3 .....	Hartranft .....	R. L. Ralston ....	Hartranft .....	84
85	Nicholson 2 .....	Hartranft .....	W. S. Williams ..	Hartranft .....	85
86	Nicholson 3 .....	Hartranft .....	W. S. Williams ..	Hartranft .....	86
87	Pruden 1 .....	Pruden .....	Thomas Pruden..	Pruden .....	87
88	Pruden 2 .....	Pruden .....	Thomas Pruden..	Pruden .....	88
89	Ralston 2 .....	Manring .....	J. S. Ralston ....	Manring .....	89
90	Ralston 3 .....	Manring .....	J. S. Ralston ....	Manring .....	90
91	Reliance 1-2 .....	Hartranft .....	D. C. Swab .....	Hartranft .....	91
92	aReliance 3 .....	Hartranft .....	D. C. Swab .....	Hartranft .....	92
93	aRogers .....	Clairfield .....	L. A. Osborn ....	Clairfield .....	93
94	aStandard .....	Clairfield .....	Chas. F. Eager ..	Clairfield .....	94
95	Sterling 1-2 .....	Manring .....	Walter H. Finley ..	Manring .....	95
96	Yellow Creek 2 .....	Bosworth, Ky. ..	Ewing Welch ....	Bosworth, Ky. ....	96
97	Yellow Creek 3 .....	Bosworth, Ky. ..	John Richards ...	Bosworth, Ky. ....	97
Cumberland County					
98	Clear Creek 1 .....	Isoline .....	J. L. Montgomery.	Isoline .....	98
99	Clear Creek 5 .....	Isoline .....	J. L. Montgomery.	Isoline .....	99
100	Fall Creek .....	Ozone .....	T. G. Cox .....	Ozone .....	100
101	bMillstone 4 .....	Millstone .....	W. J. Hodges.....	Crossville .....	101
102	bMillstone 5 .....	Millstone .....	W. J. Hodges.....	Crossville .....	102
103	Renfro .....	Renfro .....	J. G. Renfro .....	Renfro .....	103
104	Waldensia .....	Waldensia .....	E. P. Melvin.....	Waldensia .....	104
Fentress County					
105	Wilder 1.....	Wilder .....	V. R. Evans.....	Wilder .....	105
106	Wilder 2 .....	Wilder .....	V. R. Evans.....	Wilder .....	106
Grundy County					
107	Brushy Ridge .....	Tracy City ....	R. B. Roberts ....	Tracy City .....	107
108	Clouse Hill 1 .....	Tracy City ....	John C. Mahley..	Tracy City .....	108
109	Coalmont .....	A Coalmont .....	John C. Mahley..	Coalmont .....	109
110	Coalmont .....	B Coalmont .....	John C. Mahley..	Coalmont .....	110
111	Coalmont .....	H Coalmont .....	John C. Mahley..	Coalmont .....	111
112	Coalmont .....	K Coalmont .....	John C. Mahley..	Coalmont .....	112
113	Coalmont .....	L Coalmont .....	John C. Mahley..	Coalmont .....	113
114	Coalmont .....	M Coalmont .....	John C. Mahley..	Coalmont .....	114
115	Coalmont .....	O Coalmont .....	John C. Mahley..	Coalmont .....	115
116	Coalmont .....	P Coalmont .....	John C. Mahley..	Coalmont .....	116
117	Coalmont .....	Q Coalmont .....	John C. Mahley..	Coalmont .....	117
118	aEast Staub .....	Tracy City ....	R. B. Roberts ....	Tracy City .....	118
119	Flat Branch .....	Tracy City ....	W. H. Workman..	Tracy City .....	119
120	Fred Jacobs .....	Tracy City ....	T. B. Roddy ....	Tracy City .....	120
121	Ramsey 1.....	Tracy City ....	R. B. Roberts ....	Tracy City .....	121
122	aRamsey (West) .....	Tracy City ....	R. B. Roberts ....	Tracy City .....	122
123	Reid Hill 1.....	Tracy City ....	R. B. Roberts ....	Tracy City .....	123
124	Roddy Springs 1 .....	Tracy City ....	R. B. Roberts ....	Tracy City .....	124
125	Rust .....	Tracy City ....	F. M. Stepp .....	Tracy City .....	125
126	aStreet Hill .....	Tracy City ....	R. B. Roberts.....	Tracy City .....	126

a—New mines.

b—Not active.

*Coal Mines and Superintendents in Tennessee, January 1, 1908.—Continued.*

No.	MINE		SUPERINTENDENT		No.
	COUNTY AND NAME	POSTOFFICE	NAME	POSTOFFICE	
	<i>Grundy County—Con.</i>				
127	<i>a</i> Tiptop .....	Tracy City ....	R. B. Roberts.....	Tracy City .....	127
	<i>Hamilton County</i>				
128	Big Soddy .....	Soddy .....	J. H. Jones .....	Soddy .....	128
129	Davis .....	Soddy .....	J. H. Jones .....	Soddy .....	129
130	Lewis & Hatfield .....	Daisy .....	M. F. Hatfield....	Soddy Rfd. 2 ....	130
131	Montlake .....	Montlake .....	G. H. Crozer .....	Soddy Rfd. 2 ....	131
132	<i>b</i> Retro .....	Retro .....	C. E. James .....	Chattanooga .....	132
133	Sale Creek .....	Sale Creek ....	J. H. Jones .....	Soddy .....	133
134	Soddy 1-2 .....	Soddy.....	J. H. Jones .....	Soddy .....	134
135	Soddy 5 .....	Soddy.....	J. H. Jones .....	Soddy .....	135
136	Soddy 10 .....	Soddy.....	J. H. Jones .....	Soddy .....	136
	<i>Marion County</i>				
137	Battle Creek 1 .....	Orme .....	Joseph Richards ..	Orme .....	137
138	Battle Creek 2 .....	Orme .....	Joseph Richards ..	Orme .....	138
139	Etna 1 .....	Whiteside .....	G. Lewis .....	Whiteside .....	139
140	Etna 2 .....	Whiteside .....	G. Lewis .....	Whiteside .....	140
141	<i>a</i> Etna 3 .....	Whiteside .....	S. E. Brumley .....	Whiteside .....	141
142	Thomas 1-2 .....	Whitwell .....	J. F. Meagher....	Whitwell .....	142
143	Thomas 5 .....	Whitwell .....	J. F. Meagher....	Whitwell .....	143
	<i>Morgan County</i>				
144	Babahatchie .....	Oakdale .....	J. C. Foreman....	Harriman .....	144
145	Big Brushy 1-2 .....	Petros .....	W. S. Wood .....	Petros .....	145
146	Big Mt. ....	Oliver Springs..	Thomas Pruden ..	Oliver Springs....	146
147	Blizzard .....	Oliver Springs..	Charles Livingston	Oliver Sp'ngs, Rfd.	147
148	Bowling 1 .....	Coalfield .....	C. S. Bowling....	Coalfield .....	148
149	Bowling 2 .....	Coalfield .....	C. S. Bowling....	Coalfield .....	149
150	Brushy Mt. 1.....	Petros .....	N. L. Reynolds....	Petros .....	150
151	Brushy Mt. 3 .....	Petros .....	N. L. Reynolds....	Petros .....	151
152	<i>b</i> Brushy Mt. 4 .....	Petros .....	N. L. Reynolds....	Petros .....	152
153	Butler 2 .....	Oliver Springs..	J. K. Butler .....	Oliver Springs ..	153
154	Carson .....	Huffman .....	W. R. Human .....	Huffman .....	154
155	Coal Cut .....	Blue Gem .....	J. A. Fagan.....	Blue Gem .....	155
156	<i>a</i> Daniel .....	Blue Gem ..	M. A. Fry.....	Blue Gem .....	156
157	<i>a</i> Dixie .....	Oliver Springs..	R. H. Jackson....	Oliver Springs ..	157
158	Eagle .....	Oliver Springs..	J. V. Butler .....	Oliver Springs ..	158
159	Emory .....	Harriman .....	E. F. Blizzard....	Harriman .....	159
160	<i>a</i> Jackson.....	Oliver Springs..	Leroy Jackson....	Oliver Springs ..	160
161	Little Brushy .....	Coalfield .....	O. M. Bowling....	Coalfield .....	161
162	Middle Creek .....	Oliver Springs..	W. D. Richards....	Oliver Springs ..	162
163	Mount Carbon .....	Oliver Springs..	John H. Fritts....	Oliver Springs ..	163
164	<i>a</i> Prudential .....	Oliver Springs..	J. V. Butler .....	Oliver Springs ..	164
165	Tunnel Hill .....	Oliver Springs..	W. B. H. Wiley....	Oliver Springs ..	165
166	Winters Gap .....	Oliver Springs..	E. D. Phillips....	Oliver Springs ..	166
167	Winters Gap (old) .....	Oliver Springs..	W. M. Fritts.....	Oliver Springs ..	167
	<i>Overton County</i>				
168	Brier Hill 1 .....	Crawford .....	E. B. Taylor.....	Crawford .....	168
169	Brier Hill 2 .....	Crawford .....	E. B. Taylor.....	Crawford .....	169

*a*—New mines.*b*—Not active.

*Coal Mines and Superintendents in Tennessee, January 1, 1908.—Continued.*

No.	MINE		SUPERINTENDENT		No.
	COUNTY AND NAME	POSTOFFICE	NAME	POSTOFFICE	
	<i>Overton County—Continued</i>				
170	Brier Hill 4 .....	Crawford .....	E. B. Taylor.....	Crawford .....	170
171	Obey River .....	Obey City .....	J. S. Looney.....	Obey City .....	171
172	Peacock 4-5 .....	Obey City.....	J. C. Lusk.....	Obey City .....	172
	<i>Putnam County</i>				
173	aMonterey .....	Monterey .....	George W. Walker	Monterey .....	173
	<i>Rhea County</i>				
174	Evansville.....	Evansville .....	T. H. Goodson....	Graysville .....	174
175	Fox 1 .....	Montague .....	J. H. Jones .....	Soddy .....	175
176	Fox 2 .....	Montague .....	J. H. Jones.....	Soddy .....	176
177	Fox 3 .....	Montague .....	J. H. Jones.....	Soddy .....	177
178	Fox 4 .....	Montague .....	J. H. Jones.....	Soddy .....	178
179	Nelson .....	Dayton .....	Jos. Cain .....	Dayton .....	179
180	Richland 13-14 .....	Dayton.....	Jos. Cain .....	Dayton .....	180
181	Spring City .....	Spring City ....	R. P. Simpson.....	Spring City ....	181
182	Upper Falls .....	Dayton.....	Joseph Cain .....	Dayton .....	182
	<i>Roane County</i>				
183	Emory Gap .....	Emory Gap ....	W. J. McDaniel...	Emory Gap .....	183
184	Old .....	Rockwood .....	W. J. Richards....	Rockwood .....	184
	<i>Scott County</i>				
185	Glen Mary 2-4 .....	Glen Mary ....	S. A. Douglass....	Glen Mary .....	185
186	aGlen Mary 5 .....	Glen Mary ....	S. A. Douglass....	Glen Mary .....	186
187	Jakes Branch .....	Almy .....	A. Laxton .....	Almy .....	187
188	Lehigh 5 .....	Helenwood ....	W. E. Brinkerhoff	Helenwood .....	188
189	Lehigh 6 .....	Helenwood ....	W. E. Brinkerhoff	Helenwood .....	189
190	LeMoyné .....	Isham .....	J. C. Walker .....	Isham .....	190
191	Paint Rock 2 .....	Almy .....	C. A. Hall.....	Almy .....	191
192	Paint Rock 3 .....	Almy .....	J. D. Roberts ....	Almy .....	192
193	Robbins .....	Robbins .....	J. L. Robbins.....	Robbins .....	193
194	Southern Clay .....	Robbins .....	I. W. Merrill ....	Robbins .....	194
195	Stanley .....	Fogal .....	H. Swift .....	Fogal .....	195
196	Terry 1 .....	Fogal .....	W. A. Terry ....	Oneida .....	196
197	Terry 2 .....	Fogal .....	W. A. Terry ....	Oneida .....	197
198	Terry 3 .....	Fogal .....	W. A. Terry ....	Oneida .....	198
199	Terry 4 .....	Fogal .....	W. A. Terry ....	Oneida .....	199
200	Terry 5 .....	Fogal .....	W. A. Terry ....	Oneida .....	200
	<i>Sequatchie County</i>				
201	Douglass 2 .....	Dunlap .....	John M. Smith ...	Dunlap .....	201
	<i>White County</i>				
202	Bon Air 6 .....	Bon Air .....	Sumter Lea, Jr. ..	Bon Air .....	202
203	Clifty Creek 1 .....	Clifty .....	C. W. Bell .....	Clifty .....	203
204	Clifty Creek 2 .....	Clifty .....	C. W. Bell .....	Clifty .....	204
205	aClifty Creek 3 .....	Clifty .....	C. W. Bell .....	Clifty .....	205
206	Eastland 1 .....	Eastland .....	W. F. Dibrell ....	Eastland .....	206
207	Eastland 2 .....	Eastland .....	W. F. Dibrell ....	Eastland .....	207
208	Ravenscroft .....	Ravenscroft ...	W. D. Hardeman.	Ravenscroft .....	208

a—New mines.

This statement gives the name and post office address of all coal mine operators in Tennessee, January 1, 1908, arranged alphabetically by districts, counties and operators, also name and location of mines:

*Name and Post Office Address of all Coal Mine Operators in Tennessee January 1, 1908.*

No.	OPERATOR		No.	MINE	
	COUNTY AND NAME	POSTOFFICE		COUNTY AND NAME	POSTOFFICE
	<i>Bledsoe County</i>			<i>Bledsoe County</i>	
1	{ Atpontley Coal Co....	Atpontley ...	1	{ Atpontley 1 .....	Atpontley
	{ Atpontley Coal Co....	Atpontley ...	2	{ aAtpontley 5 .....	Atpontley
	<i>Cumberland County</i>			<i>Cumberland County</i>	
2	{ Clear Creek Coal Co..	Isoline .....	3	{ Clear Creek 1 .....	Isoline
	{ Clear Creek Coal Co..	Isoline .....	4	{ Clear Creek 5 .....	Isoline
3	{ bCumb. Coal & C. Co..	Crossville ....	5	{ bMillstone 4 .....	Millstone
	{ Cumb. Coal & C. Co..	Crossville ....	6	{ bMillstone 5 .....	Millstone
4	Fall Creek Collieries.	Ozone .....	7	Fall Creek .....	Ozone
5	Renfro Coal & C. Co.	Renfro .....	8	Renfro .....	Renfro
6	Waldensia Coal Co..	Waldensia ...	9	Waldensia .....	Waldensia
	<i>Fentress County</i>			<i>Fentress County</i>	
7	{ Fentress C. & C. Co..	Wilder .....	10	{ Wilder 1 .....	Wilder
	{ Fentress C. & C. Co..	Wilder .....	11	{ Wilder 2 .....	Wilder
	<i>Grundy County</i>			<i>Grundy County</i>	
8	Flat Branch Coal Co.	Tracy City ..	12	Flat Branch .....	Tracy City
9	Gem Coal Co.....	Tracy City ..	13	Rust .....	Tracy City
10	{ Nunley Ridge C. Co..	Tracy City ..	14	Brushy Ridge .....	Tracy City
	{ Nunley Ridge C. Co..	Tracy City ..	15	Roddy Springs .....	Tracy City
11	T. B. Roddy.....	Tracy City ..	16	Fred Jacobs .....	Tracy City
	{ Sewanee C. & C. Co..	Coalmont ....	17	Clouse Hill 1 .....	Tracy City
	{ Sewanee C. & C. Co..	Coalmont ....	18	Coalmont A.....	Coalmont
	{ Sewanee C. & C. Co..	Coalmont ....	19	Coalmont B .....	Coalmont
	{ Sewanee C. & C. Co..	Coalmont ....	20	Coalmont H .....	Coalmont
12	{ Sewanee C. & C. Co..	Coalmont ....	21	Coalmont K .....	Coalmont
	{ Sewanee C. & C. Co..	Coalmont ....	22	Coalmont L .....	Coalmont
	{ Sewanee C. & C. Co..	Coalmont ....	23	Coalmont M .....	Coalmont
	{ Sewanee C. & C. Co..	Coalmont ....	24	Coalmont O .....	Coalmont
	{ Sewanee C. & C. Co..	Coalmont ....	25	aCoalmont P .....	Coalmont
	{ Sewanee C. & C. Co..	Coalmont ....	26	aCoalmont Q .....	Coalmont
	Tenn. Con. Coal Co..	Tracy City ..	27	aEast Staub .....	Tracy City
	Tenn. Con. Coal Co..	Tracy City ..	28	Ramsey 1 .....	Tracy City
13	{ Tenn. Con. Coal Co..	Tracy City ..	29	aRamsey (West) ...	Tracy City
	{ Tenn. Con. Coal Co..	Tracy City ..	30	Reid Hill 1.....	Tracy City
	{ Tenn. Con. Coal Co..	Tracy City ..	31	aStreet Hill .....	Tracy City
	{ Tenn. Con. Coal Co..	Tracy City ..	32	aTiptop .....	Tracy City
	<i>Marion County</i>			<i>Marion County</i>	
14	{ Battle Creek C. & C. C	Orme .....	33	{ Battle Creek 1.....	Orme
	{ Battle Creek C. & C. C	Orme .....	34	{ Battle Creek 2.....	Orme
	New Etna Coal Co..	Chattanooga	35	{ Etna 1 .....	Whiteside
15	{ New Etna Coal Co..	Chattanooga	36	{ Etna 2 .....	Whiteside
	{ New Etna Coal Co..	Chattanooga	37	{ aEtna 3 .....	Whiteside

a—New mines.

b—Not active.

Name and Post Office Address of all Coal Mine Operators in Tennessee, January 1, 1908.—Continued.

No.	OPERATOR		No.	MINE	
	COUNTY AND NAME	POSTOFFICE		COUNTY AND NUMBER	POSTOFFICE
	<i>Marion County—Continued.</i>			<i>Marion County—Continued.</i>	
16	{ Tenn. C., I. & R.R. Co.	Birmingh'm A	38	{ Thomas 1-2 .....	Whitwell
	{ Tenn. C., I. & R.R. Co.	Birmingh'm A	39	{ Thomas 5 .....	Whitwell
	<i>Overton County</i>			<i>Overton County</i>	
17	{ Brier Hill Collieries..	Crawford ....	40	{ Brier Hill 1 .....	Crawford
	{ Brier Hill Collieries..	Crawford ....	41	{ Brier Hill 2 .....	Crawford
	{ Brier Hill Collieries..	Crawford ....	42	{ Brier Hill 4 .....	Crawford
18	Obey City Coal Co...	Obey City ...	43	Obey River .....	Obey City
19	Peacock Coal Co....	Obey City ...	44	Peacock 4-5 .....	Obey City
	<i>Putnam County</i>			<i>Putnam County</i>	
20	aMonterey C. & M. Co.	Monterey ....	45	aMonterey .....	Monterey
	<i>Sequatchie County</i>			<i>Sequatchie County</i>	
21	Southern Steel Co...	Birmingh'm A	46	Douglass 2 .....	Dunlap
	<i>White County</i>			<i>White County</i>	
22	{ Bon Air Coal & I. Co.	Nashville ....	47	{ Bon Air 6 .....	Bon Air
	{ Bon Air Coal & I. Co.	Nashville ....	48	{ Eastland 1 .....	Eastland
	{ Bon Air Coal & I. Co.	Nashville ....	49	{ Eastland 2 .....	Eastland
	{ Bon Air Coal & I. Co.	Nashville ....	50	Ravenscroft .....	Ravenscroft
23	{ Clifty Creek Coal Co.	Clifty .....	51	{ Clifty Creek 1 .....	Clifty
	{ Clifty Creek Coal Co.	Clifty .....	52	{ Clifty Creek 2 .....	Clifty
	{ Clifty Creek Coal Co.	Clifty .....	53	{ aClifty Creek 3 .....	Clifty
	<i>Hamilton County</i>			<i>Hamilton County</i>	
24	bHamilton Coal Co...	Chattanooga .	54	bRetro .....	Retro
25	Lewis & Hatfield ....	Soddy Rfd. 2.	55	Lewis & Hatfield ...	Daisy
26	Montlake Coal Co...	Chattanooga .	56	Montlake .....	Soddy Rfd. 2
	{ New Soddy Coal Co.	Chattanooga .	57	Big Soddy .....	Soddy
27	{ New Soddy Coal Co.	Chattanooga .	58	Davis .....	Soddy
	{ New Soddy Coal Co.	Chattanooga .	59	Soddy 1-2 .....	Soddy
	{ New Soddy Coal Co.	Chattanooga .	60	Soddy 5.....	Soddy
	{ New Soddy Coal Co.	Chattanooga .	61	Soddy 10 .....	Soddy
28	Sale Creek Coal Co...	Chattanooga .	62	Sale Creek .....	Sale Creek
	<i>Morgan County</i>			<i>Morgan County</i>	
29	Big Brushy C. & C.Co.	Petros .....	63	Big Brushy 1-2 .....	Petros
30	Blue Ridge Coal Co..	Oliver Springs	64	Winters Gap .....	Oliver Spgs.
31	{ H. B. Bowling C. Co.	Coalfield ....	65	{ Bowling 1 .....	Coalfield
	{ H. B. Bowling C. Co.	Coalfield ....	66	{ Bowling 2 .....	Coalfield
32	Butler Coal M. Co...	Oliver Springs	67	Butler 2 .....	Oliver Spgs.
33	Coal Cut Coal Co....	Blue Gem ...	68	Coal Cut .....	Blue Gem
34	aCraig-Jackson C. Co.	Oliver Springs	69	aJackson .....	Oliver Spgs.
35	aDaniel Bros. Coal Co.	Harriman ....	70	aDaniel .....	Blue Gem
36	aDixie Coal Co.....	Oliver Springs	71	aDixie .....	Oliver Spgs.
37	Eagle Coal Co.....	Oliver Springs	72	Eagle .....	Oliver Spgs.
38	W. M. Fritts .....	Oliver Springs	73	Mount Carbon .....	Oliver Spgs.
39	W. M. Fritts & Son..	Oliver Springs	74	Winters Gap (old)...	Oliver Spgs.
40	Harriman Coal Co...	Harriman ....	75	Emory .....	Harriman
41	W. R. Human.....	Huffman ....	76	Carson .....	Huffman
42	Little Brushy C. Co.	Coalfield ....	77	Little Brushy .....	Coalfield

a—New mines.

b—Not active.

*Name and Post Office Address of all Coal Mine Operators in Tennessee, January 1, 1908.—Continued.*

No.	OPERATOR		No.	MINE	
	COUNTY AND NAME	POSTOFFICE		COUNTY AND NAME	POSTOFFICE
	<i>Morgan County—Continued.</i>			<i>Morgan County—Continued.</i>	
43	Big Mt. Coal Co.....	Knoxville ....	78	Blizzard .....	Oliver Spgs.
44	Oliver Coal Co. ....	Oliver Springs	79	Middle Creek.....	Oliver Spgs.
45	Poplar Creek C. Co..	Oliver Springs	80	Big Mt. ....	Oliver Spgs.
46	aPrudential Coal Co..	Oliver Springs	81	aPrudential .....	Oliver Spgs.
47	Standard Coal Co....	Harriman ....	82	Babahatchie .....	Oakdale
48	State of Tennessee...	Nashville ....	83	Brushy Mt. 1 .....	Petros
	State of Tennessee...	Nashville ....	84	Brushy Mt. 3 .....	Petros
49	bState of Tennessee...	Nashville ....	85	bBrushy Mt. 4 .....	Petros
	Tunnel Hill Coal Co..	Oliver Springs	86	Tunnel Hill .....	Oliver Spgs.
	<i>Rhea County</i>			<i>Rhea County</i>	
50	Dayton Coal & I. Co.	Dayton .....	87	Nelson .....	Dayton
	Dayton Coal & I. Co.	Dayton .....	88	Richland 13-14 .....	Dayton
	Dayton Coal & I. Co.	Dayton .....	89	Upper Falls .....	Dayton
51	Evensville Coal Co..	Soddy .....	90	Evensville .....	Evensville
52	Fox Coal Co.....	Chattanooga ..	91	Fox 1 .....	Graysville
	Fox Coal Co.....	Chattanooga ..	92	Fox 2 .....	Graysville
	Fox Coal Co.....	Chattanooga ..	93	Fox 3 .....	Graysville
	Fox Coal Co.....	Chattanooga ..	94	Fox 4 .....	Graysville
53	R. P. Simpson .....	Spring City..	95	Spring City .....	Spring City
	<i>Roane County</i>			<i>Roane County</i>	
54	Emory Gap Coal Co..	Atlanta, Ga..	96	Emory Gap .....	Emory Gap
55	Roane Iron Co.....	Rockwood ...	97	Old .....	Rockwood
	<i>Scott County</i>			<i>Scott County</i>	
56	Eagle Mining Co....	Almy .....	98	Paint Rock 2 .....	Almy
57	Glen Mary C. & C. Co.	Glen Mary....	99	Glen Mary 2-4 .....	Glen Mary
	Glen Mary C. & C. Co.	Glen Mary....	100	aGlen Mary 5.....	Glen Mary
58	Jasper Hughett.....	Robbins .....	101	Robbins B. G.....	Robbins
59	J. C. LeMoyne.....	Melvale, Md..	102	Lemoyne .....	Isham
60	Oneida Coal Co.....	Oneida .....	103	Terry 1 .....	Fogal
	Oneida Coal Co.....	Oneida .....	104	Terry 2 .....	Fogal
	Oneida Coal Co.....	Oneida .....	105	Terry 3 .....	Fogal
	Oneida Coal Co.....	Oneida .....	106	Terry 4 .....	Fogal
	Oneida Coal Co.....	Oneida .....	107	Terry 5 .....	Fogal
61	Paint Rock Coal Co..	Almy .....	108	Paint Rock 3 .....	Almy
62	Pine Knot Coal Co..	Harriman ....	109	Jake's Branch .....	Almy
63	Scott Co. Coal Co....	Helmwood ...	110	Lehigh 5 .....	Helmwood
	Scott Co. Coal Co....	Helmwood ...	111	Lehigh 6 .....	Helmwood
64	South. Clay Mfg. Co..	Chattanooga ..	112	Southern Clay .....	Robbins
65	Stanley Coal Co.....	Harriman ....	113	Stanley .....	Fogal
	<i>Anderson County</i>			<i>Anderson County</i>	
66	Andiers Ridge C. Co..	Knoxville ....	114	Andiers Ridge .....	Briceville
67	Big Three M. & M. C	Oliver Springs	115	Big Three .....	Oliver Spgs.
68	Black Diamond C. Co.	Knoxville ....	116	Black Diamond 1 ...	Coal Creek
	Black Diamond C. Co.	Knoxville ....	117	Black Diamond 5 ...	Coal Creek
	Black Diamond C. Co.	Knoxville ....	118	Black Diamond 6 ...	Briceville

a—New mines. b—Not active.

Name and Post Office Address of all Coal Mine Operators in Tennessee, January 1, 1908.—Continued.

No.	OPERATOR		No.	MINE	
	COUNTY AND NAME	POSTOFFICE		COUNTY AND NAME	POSTOFFICE
<i>Anderson County—Con.</i>			<i>Anderson County—Con.</i>		
69	Campbell Coal M. Co.	Oliver Springs	119	Campbell 1 .....	Oliver Spgs.
	Campbell Coal M. Co.	Oliver Springs	120	Campbell 2 .....	Oliver Spgs.
70	Campbell Coal M. Co.	Oliver Springs	121	Campbell 3 .....	Oliver Spgs.
	Coal Creek Coal Co...	Knoxville ....	122	Fraterville 1 .....	Coal Creek
71	Coal Creek Coal Co...	Knoxville ....	123	Thistle 1 .....	Coal Creek
	Coal Creek Coal Co...	Knoxville ....	124	Thistle 2 .....	Coal Creek
72	Knoxville Iron Co...	Knoxville ....	125	Cross Mt. 1 .....	Briceville
	Knoxville Iron Co...	Knoxville ....	126	Cross Mt. 3 .....	Briceville
73	D. J. Riding .....	Briceville ....	127	Riding .....	Briceville
	Royal Coal & C. Co.	Knoxville ....	128	Brookside .....	Pless
74	Royal Coal & C. Co.	Knoxville ....	129	Eureka 2 .....	Pless
	Royal Coal & C. Co.	Knoxville ....	130	Buck Mt. ....	Pless
75	W. T. Smith & Sons.	Coal Creek...	131	Smith .....	Coal Creek
	Tennessee Coal Co...	Knoxville ....	132	Middle Ridge .....	Briceville
76	Tennessee Coal Co...	Knoxville ....	133	Tennessee .....	Briceville
	Windrock C. & C. Co.	Windrock ....	134	Windrock 1 .....	Windrock
<i>Campbell County</i>			<i>Campbell County</i>		
77	Bear Wallow Coal Co.	Careyville ...	135	Bear Wallow .....	Careyville
78	Big Block Coal Co...	Cupp .....	136	Big Block .....	Cupp
79	Black Gem Coal Co.	Knoxville ....	137	Black Gem .....	Careyville
	Block Coal & C. Co.	Block .....	138	Block 1 .....	Block
80	Block Coal & C. Co.	Block .....	139	Block 2 .....	Block
	Blue Gem Coal Co...	Jellico .....	140	Speed B. G. ....	Jellico
81	W. G. Bradford.....	Jellico .....	141	Sunshine .....	Jellico
82	Brummet,Davis & Co.	Newcomb ....	142	Brummet .....	Newcomb
83	Campbell Coal M. Co.	Westbourne ..	143	Jackson .....	Westbourne
84	Careyville Coal Co...	Careyville ....	144	Bowling .....	Careyville
85	Chaska Coal Co.....	Chaska .....	145	Chaska .....	Chaska
86	Davis Creek Coal Co.	Cupp .....	146	Davis Creek .....	Cupp
87	Elk Hart Coal Co...	Briceville ....	147	Elk Hart B. G. ....	Elk Valley
	Elk Valley C. M. Co..	Elk Valley ...	148	Elk Valley J. S. 1 ..	Elk Valley
88	Elk Valley C. M. Co..	Elk Valley ...	149	Elk Valley J. S. 2 ..	Elk Valley
	Elk Valley C. M. Co..	Elk Valley ...	150	Elk Valley Splint S..	Elk Valley
89	Evans Coal Co.....	Knoxville ....	151	Evans .....	Jellico
	Falls Branch C. Co...	Wooldridge ..	152	Falls Branch .....	Wooldridge
90	Falls Branch C. Co...	Wooldridge ..	153	Powhattan .....	Wooldridge
	Italian B. G. Coal Co.	Newcomb ....	154	Italian B. G. ....	Newcomb
91	Italy Coal Co.....	Cupp .....	155	Italy .....	Cupp
92	Jellico B. G. Coal Co.	Jellico .....	156	Jameson B. G. ....	Jellico
93	Jellico Powder Co...	Jellico .....	157	Tennessee B. G. ....	Jellico
94	Kimberly Min. Co...	Cupp .....	158	Kimberly .....	Cupp
	LaFollette C.,I. & R.C.	LaFollette ...	159	Gem .....	Peabody
95	LaFollette C.,I. & R.C.	LaFollette ...	160	Kent .....	LaFollette
	LaFollette C.,I. & R.C.	LaFollette ...	161	Rex 1 .....	LaFollette
96	LaFollette C.,I. & R.C.	LaFollette ...	162	Rex 2 .....	LaFollette
	M. H. Layne.....	Newcomb ....	163	Layne .....	Newcomb

—New mines.

*Name and Post Office Address of all Coal Mine Operators in Tennessee, January 1, 1908.—Continued.*

No.	OPERATOR		No.	MINE	
	COUNTY AND NAME	POSTOFFICE		COUNTY AND NAME	POSTOFFICE
<i>Campbell County—Con.</i>			<i>Campbell County—Con.</i>		
99	aMetta Coal Co.....	Johnson City.	164	aMetta .....	Elk Valley
100	Morley Coal Co.....	Knoxville ...	165	Morley .....	Morley
101	{ Proctor Coal Co.....	Red Ash, Ky..	166	{ Indian Mt. 1 .....	Jellico
102	{ Proctor Coal Co.....	Red Ash, Ky..	167	{ Indian Mt. 2 .....	Jellico
103	Rector Coal Co.....	Titus .....	168	Rector .....	Titus
104	Red Ash Coal Co.....	Careyville ...	169	Red Ash .....	Careyville
105	Remy Coal Co.....	Gatliff .....	170	Remy .....	Gatliff
106	{ Rich Mt. Coal Co....	Bennett .....	171	{ Rich Mt. 1 .....	Bennett
107	{ Rich Mt. Coal Co....	Bennett .....	172	{ Rich Mt. 2 .....	Bennett
108	{ Royal Coal & C. Co..	Knoxville ....	173	{ Cambria .....	Pless
109	{ Royal Coal & C. Co..	Knoxville ....	174	{ Royal (old) .....	Deposit
110	{ Siler & Marion.....	Newcomb ....	175	{ Lone Mt. ....	Newcomb
111	{ Siler & Marion.....	Newcomb ....	176	{ aRussell .....	Newcomb
112	{ Southern C. & C. Co.	Gatliff .....	177	{ Southern 1 .....	Gatliff
113	{ Southern C. & C. Co.	Gatliff .....	178	{ Southern 2 .....	Gatliff
114	Tenn.-Jellico Coal Co.	Anthras .....	179	Tenn.-Jellico .....	Anthras
115	Westbourne Coal Co.	Westbourne ..	180	Westbourne .....	Westbourn
116	{ C. M. Woodward....	Jellico .....	181	{ Smith .....	Jellico
117	{ C. M. Woodward....	Jellico .....	182	{ Woodward .....	Jellico
118	Wooldridge-Jel. C.Co.	Jellico .....	183	aMary - Anna.....	Wooldridge
119	Wooldridge-Jel. C.Co.	Jellico .....	184	Wooldridge .....	Wooldridge
120	Zechini Coal Co.....	Newcomb ....	185	bZechini .....	Newcomb
<i>Claiborne County</i>			<i>Claiborne County</i>		
121	{ Bryson Mt. C. & C. Co	Mid'lesboro, K	186	{ Bryson Mt. 1 .....	Hartranft
122	{ Bryson Mt. C. & C. Co	Mid'lesboro, K	187	{ Bryson Mt. 2 .....	Hartranft
123	5 Campbell Coal Co....	Atlanta, Ga... 188		Buffalo .....	Anthras
124	{ Fork Ridge C.&C.Co.	Fork Ridge .. 189		{ Fork Ridge 1 .....	Fork Ridge
125	{ Fork Ridge C.&C.Co.	Fork Ridge .. 190		{ Fork Ridge 2 .....	Fork Ridge
126	{ Fork Ridge C.&C.Co.	Fork Ridge .. 191		{ Fork Ridge 3 .....	Fork Ridge
127	King Mt. Coal Co....	Clairfield .... 192		King Mt. ....	Clairfield
128	{ Mingo Coal & C. Co.	Mid'lesboro, K 193		{ Mingo 1 .....	Hartranft
129	{ Mingo Coal & C. Co.	Mid'lesboro, K 194		{ Mingo 2 .....	Hartranft
130	{ Mingo Coal & C. Co.	Mid'lesboro, K 195		{ Mingo 3 .....	Hartranft
131	Nicholson Coal Co....	Mid'lesboro, K 196		{ Nicholson 2 .....	Hartranft
132	Nicholson Coal Co....	Mid'lesboro, K 197		{ Nicholson 3 .....	Hartranft
133	Pruden Coal & C. Co.	Pruden .....	198	Pruden 1 .....	Pruden
134	Pruden Coal & C. Co.	Pruden .....	199	Pruden 2 .....	Pruden
135	Ralston Coal Co.....	Mid'lesboro, K 200		{ Ralston 2 .....	Manring
136	Ralston Coal Co.....	Mid'lesboro, K 201		{ Ralston 3 .....	Manring
137	{ Reliance C. & C. Co.	Hartranft .... 202		{ Reliance 1-2 .....	Hartranft
138	{ Reliance C. & C. Co.	Hartranft .... 203		{ aReliance 3 .....	Hartranft
139	aRogers Coal Co.....	Knoxville .... 204		{ aRogers .....	Clairfield
140	aStandard C. & C. Co.	Clairfield .... 205		{ aStandard .....	Clairfield
141	Sterling C. & C. Co.	Manring .....	206	Sterling 1-2 .....	Manring
142	{ Yellow Creek C. Co..	Mid'lesboro, K 207		{ Yellow Creek 2 .....	Bosworth, Ky
143	{ Yellow Creek C. Co..	Mid'lesboro, K 208		{ Yellow Creek 3 .....	Bosworth, Ky

a—New mines. b—Not active.

The following statement shows the average number of employes in and around the coal mines of Tennessee, and in what capacity employed, by counties and districts, for 1907:

*Employes in and Around Tennessee Coal Mines for 1907.*

COUNTIES AND DISTRICTS	UNDERGROUND WORKERS							OUTSIDE WORKERS				Grand Total Work- ers Inside and Out- side.
	Pick Miners	Haulage Men	Foremen	Loaders Ma- chine Coal	Mining Ma- chine Men	Others Inside	Total Inside	Blacksmiths	Timber Men	Others Outside	Total Outside	
	1	2	3	4	5	6	7	8	9	10	11	
<i>First District.</i>												
Bledsoe .....	40	5	1	...	...	3	49	2	2	10	14	63
Cumberland .....	92	30	4	...	...	16	142	4	2	28	34	176
Fentress .....	85	4	1	...	...	6	96	1	2	8	11	107
Grundy .....	616	81	13	...	...	97	807	15	...	40	55	862
Marion .....	340	62	7	9	6	44	468	7	18	53	78	546
Overton .....	74	21	3	...	...	12	110	3	1	18	22	132
Putnam .....	4	2	...	...	...	4	10	...	...	...	...	10
Sequatchie .....	125	18	2	...	...	6	151	2	4	12	18	169
White .....	273	39	5	60	40	149	566	11	17	116	144	710
Total .....	1,649	262	36	69	46	337	2,399	45	46	285	376	2,775
<i>Second District.</i>												
Hamilton .....	418	66	8	...	...	96	588	9	11	189	209	797
Morgan .....	778	92	19	32	10	99	1,030	12	27	107	146	1,176
Rhea .....	215	51	11	...	...	56	333	9	6	83	98	431
Roane .....	132	4	3	...	...	81	220	2	5	25	32	252
Scott .....	344	36	10	...	...	23	413	7	11	35	53	466
Total .....	1,887	249	51	32	10	355	2,584	39	60	439	538	3,122
<i>Third District.</i>												
Anderson .....	771	120	19	129	22	105	1,166	17	25	149	191	1,357
Campbell .....	1,399	159	42	230	88	231	2,149	36	53	268	357	2,506
Clalborne .....	944	113	14	19	5	95	1,190	17	41	90	148	1,338
Total .....	3,114	392	75	378	115	431	4,505	70	119	507	696	5,201
Grand Total .....	6,650	903	162	479	171	1,123	9,488	154	225	1,231	1,610	11,098

a—Of this number 506 are at the State mines at Petros.

The following statement shows average wages paid per day and total wages paid to employes in and around the coal mines of Tennessee for 1907, arranged by counties and districts:

*Average Wages Per Day and Total Wages Paid Employes of Tennessee Coal Mines, 1907.*

COUNTIES AND DISTRICTS	UNDERGROUND WORKERS							OUTSIDE WORKERS				Grand Total Work-ers Inside and Out-side.	Total Amount Paid for Labor
	13	14	15	16	17	18	19	Blacksmiths	Timber Men	Others Outside	Total Outside		
	Pit Miners	Haulage Men	Foremen	Loaders Machine Coal	Mining Machine Men	Others Inside	Total Inside						
First District.													
Bledsoe .....													
Cumberland .....													
Fentress .....													
Grundy .....													
Marion .....													
Overton .....													
Putnam .....													
Sequatchie .....													
White .....													
Total ....	\$2.40	\$1.51	\$3.41	\$2.10	\$2.50	\$1.37	\$2.16	\$2.00	\$1.72	\$1.98	\$1.95	\$2.14	\$1,542,260
Second Dis.													
Hamilton ..													
Morgan .....													
Rhea .....													
Roane .....													
Scott .....													
Total ....	\$2.29	\$1.85	\$3.10	\$1.50	\$2.85	\$2.25	\$2.25	\$2.00	\$1.80	\$1.51	\$1.57	\$2.13	\$1,312,781
Third District													
Anderson ..													
Campbell ..													
Claiborne ..													
Total ....	\$2.40	\$2.04	\$3.44	\$2.40	\$2.50	\$2.10	\$2.35	\$2.46	\$1.92	\$1.86	\$1.91	\$2.30	\$2,685,479
Grand total	\$2.37	\$1.83	\$3.35	\$2.30	\$2.52	\$1.91	\$2.21	\$1.80	\$1.77	\$1.82	\$1.82	\$2.21	\$5,540,520

The following statement shows the coal product and values in Tennessee for 1907 by counties, also disposition of product, average value per ton obtained, and average number of days active:

*Coal Product and Values, Disposition of Product, Average Value Per Ton and Average Number of Days Active.*

COUNTY	COAL PRODUCT (Short Tons)					COAL VALUES		Average Number Days Active
	Loaded for Shipment	Used for Fuel and Steam	Sold Local Trade and Employees	Coked	Total Product	Total Value	Average Value Per Ton	
	37	38	39	40	41	42	43	44
Anderson .....	820,387	9,565	8,281	.....	838,233	\$1,013,642	\$1.21	216
Bledsoe .....	25,639	180	60	.....	25,879	29,554	1.15	208
Campbell .....	1,243,938	25,123	34,223	122,546	1,425,830	1,971,922	1.38	218
Claiborne .....	1,220,892	17,385	2,500	.....	1,240,777	1,240,282	1.00	244
Cumberland .....	80,134	2,763	372	7,653	90,922	124,405	1.37	212
Fentress .....	93,678	1,425	720	.....	95,823	116,468	1.21	250
Grundy .....	522,107	2,847	1,743	33,266	559,963	620,219	1.10	261
Hamilton .....	288,293	8,957	3,416	82,523	383,189	509,513	1.33	252
Marion .....	338,203	3,969	4,712	54,370	401,254	555,567	1.38	283
Morgan .....	540,510	10,574	2,917	102,247	666,248	670,648	1.08	200
Overton .....	73,996	1,730	330	.....	76,056	99,375	1.30	235
Putnam .....	400	.....	.....	.....	400	520	1.30	20
Rhea .....	70,649	5,811	7,529	138,316	222,305	245,888	1.10	251
Roane .....	8,860	10,235	3,058	148,595	170,748	259,821	1.52	260
Scott .....	187,204	3,271	3,340	.....	193,815	300,677	1.55	212
Sequatchie .....	34,500	2,750	3,600	79,491	120,341	178,861	1.50	279
White .....	386,372	15,699	2,777	34,280	439,128	509,777	1.16	265
Total .....	5,935,762	122,284	79,578	803,287	6,940,911	\$8,482,899	\$1.22	236

a—The product of State operations at Brushy Mountain mines amounts to 351,717 short tons valued at \$347,073, or 0.99 cents per ton. The product for Morgan County, exclusive of the State operations at Brushy Mountain, amounts to 304,531 short tons, valued at \$359,335, or \$1.14 per ton.

The following statement shows coal product of Tennessee from 1840 to 1907, inclusive, and coal values of Tennessee from 1873 to 1907, inclusive:

*Coal Product and Values of Tennessee from 1840 to 1907, Inclusive.*

YEAR	Product (Short Tons)	Value (Dollars)	Value Per Ton	YEAR	Product (Short Tons)	Value (Dollars)	Value Per Ton
1840a	558			1874	350,000	\$ 385,000	\$1.10
1841	600			1875	360,000	396,000	1.10
1842	1,000			1876	550,000	605,000	1.10
1843	4,500			1877	450,000	495,000	1.10
1844	10,000			1878	375,000	412,000	1.10
1845	18,000			1879	496,131	545,744	1.10
1846	25,000			1880	641,042	769,250	1.20
1847	30,000			1881	750,000	900,000	1.20
1848	40,000			1882	850,000	1,020,000	1.20
1849	52,000			1883	1,000,000	1,150,000	1.15
1850	60,000			1884	1,200,000	1,380,000	1.15
1851	70,000			1885	1,440,957	1,585,052	1.10
1852	75,000			1886	1,714,290	1,885,719	1.10
1853	85,000			1887	1,900,000	2,090,000	1.10
1854	90,000			1888	1,967,297	2,164,026	1.10
1855	100,000			1889	1,925,689	2,338,309	1.21
1856	115,000			1890	2,169,585	2,386,543	1.10
1857	125,000			1891	2,404,484	2,655,045	1.10
1858	135,000			1892	2,332,677	2,635,924	1.13
1859	150,000			1893	1,902,258	2,048,449	1.08
1860a	165,300			1894	2,180,879	2,119,481	0.97
1861	150,000			1895	2,319,720	2,157,840	0.93
1862	140,000			1896	2,663,714	2,251,064	0.86
1863	100,000			1897	2,880,994	2,316,239	0.81
1864	100,000			1898	3,084,748	2,340,346	0.77
1865	100,000			1899	3,736,134	3,287,797	0.88
1866	100,000			1900	3,904,048	4,294,928	1.10
1867	110,000			1901	3,785,672	4,115,974	1.09
1868	125,000			1902	4,232,332	5,278,921	1.25
1869	130,000			1903	4,810,758	6,173,724	1.28
1870a	133,418			1904	4,847,242	5,617,095	1.16
1871	180,000			1905	5,552,576	6,496,865	1.17
1872	224,000			1906	6,272,457	7,565,286	1.20
1873	350,000	\$385,000	\$1.10	1907	6,940,911	8,482,899	1.22

a—U. S. census (fiscal report.) All other data from 1841 to 1872, inclusive, obtained from U. S. Geological Survey (fiscal report.)

The following statement shows coal product and values, and values per ton in Tennessee by counties and districts, for 1907, compared with 1906, also increases and decreases.

*Coal Product and Values in Tennessee for 1907 Compared With 1906.*

COUNTY AND DISTRICT	1907			1906			INCREASE	
	Product (Short Tons)	Value (Dollars)	Value Per Ton	Product (Short Tons)	Value (Dollars)	Value Per Ton	Product (Short Tons)	Value (Dollars)
<i>First District.</i>								
Bledsoe .....	25,879	\$ 29,554	\$1.15	22,901	\$ 27,481	\$1.20	2,978	\$ 2,073
Cumberland .....	90,922	124,405	1.37	64,509	99,506	1.38	26,413	24,899
Fentress .....	95,823	116,468	1.21	90,665	113,331	1.25	5,158	3,137
Grundy .....	559,963	620,219	1.10	437,954	481,032	1.10	122,009	139,187
Marion .....	401,254	555,567	1.38	388,919	563,382	1.45	12,335	a7,815
Overton .....	76,056	99,375	1.30	81,488	101,985	1.25	a5,432	a2,610
Putnam .....	400	520	1.30	.....	.....	.....	400	520
Sequatchie .....	120,341	178,861	1.50	41,164	51,465	1.25	79,177	127,406
White .....	439,128	509,777	1.16	439,256	543,324	1.24	a128	a33,547
Total .....	1,809,766	\$2,234,746	\$1.23	1,566,856	\$1,981,496	\$1.26	242,910	\$ 253,250
<i>Second District.</i>								
Hamilton .....	383,189	\$ 509,513	\$1.33	317,183	390,782	\$1.23	66,006	\$ 118,731
Morgan .....	656,248	706,408	1.08	649,459	757,248	1.17	6,789	a50,840
Rhea .....	222,305	245,888	1.10	267,870	319,892	1.20	a45,565	a74,004
Roane .....	170,748	259,821	1.52	145,205	187,358	1.29	25,543	72,463
Scott .....	193,815	300,677	1.55	179,390	268,133	1.49	14,425	32,544
Total .....	1,626,305	\$2,022,307	\$1.24	1,559,107	\$1,923,413	\$1.23	67,198	\$ 98,894
<i>Third District.</i>								
Anderson .....	838,233	\$1,013,642	\$1.21	765,448	\$ 933,761	\$1.22	72,785	\$ 79,881
Campbell .....	1,425,830	1,971,922	1.38	1,298,830	1,644,049	1.27	127,000	327,873
Clatsborne .....	1,240,777	1,240,282	1.00	1,082,216	1,082,567	1.00	158,561	157,715
Total .....	3,504,840	\$4,225,846	\$1.21	3,146,494	\$3,660,377	\$1.16	358,346	\$ 565,469
Grand Total.....	6,940,911	\$8,482,899	\$1.22	6,272,457	\$7,565,286	\$1.20	668,454	\$ 917,613

a—Decrease.

RECAPITULATION.

DISTRICTS	INCREASE FOR 1907	
	Product (Short Tons)	Value (Dollars)
First .....	242,910	\$ 253,250
Second .....	67,198	98,894
Third .....	358,346	565,469
Total .....	668,454	\$ 917,613

The following statement shows rank of coal producing counties in Tennessee for 1907, first in quantity of product, and then in value of product, with percentage of each contributed by each county:

*Relative Rank of Coal Producing Counties in Tennessee for 1907, With Amount and Value of Product, and Percentage of Each.*

Rank	COUNTY	Amount of Product (Short Tons)	Per Cent of Total Product	Rank	COUNTY	Value of Product (Dollars)	Per Cent of Total Value
1	Campbell .....	1,425,830	20.54	1	Campbell .....	\$1,971,922	23.24
2	Claiborne .....	1,240,777	17.87	2	Claiborne .....	1,240,282	14.62
3	Anderson .....	838,233	12.07	3	Anderson .....	1,013,642	11.95
4	Morgan .....	656,248	9.45	4	Morgan .....	706,408	8.33
5	Grundy .....	559,963	8.06	5	Grundy .....	620,219	7.31
6	White .....	439,128	6.33	6	Marion .....	555,567	6.55
7	Marion .....	401,254	5.78	7	White .....	509,777	6.01
8	Hamilton .....	383,189	5.52	8	Hamilton .....	509,513	6.00
9	Rhea .....	222,305	3.20	9	Scott .....	300,677	3.54
10	Scott .....	193,815	2.80	10	Roane .....	259,821	3.06
11	Roane .....	170,748	2.46	11	Rhea .....	245,888	2.90
12	Sequatchie .....	120,341	1.73	12	Sequatchie .....	178,861	2.11
13	Fentress .....	95,823	1.40	13	Cumberland .....	124,405	1.47
14	Cumberland .....	90,922	1.31	14	Fentress .....	116,468	1.38
15	Overton .....	76,056	1.10	15	Overton .....	99,375	1.17
16	Bledsoe .....	25,879	.37	16	Bledsoe .....	29,554	.35
17	Putnam .....	400	.01	17	Putnam .....	520	.01
	Total .....	6,940,911	100.00		Total .....	\$8,482,899	100.00

It will be observed from this statement that Campbell County is first in rank of the coal producing counties, furnishing 20.54 per cent. of the total product for the State, and also first in coal values, furnishing 23.24 per cent. of the total value for the State.

It will also be observed that while Claiborne County furnished 17.87 per cent. of the total coal product for the State it only furnished 14.62 per cent. of the total coal values for the State.

The following statement shows relative rank of coal producing counties in Tennessee from 1891 to 1907, inclusive:

*Relative Rank of Coal Producing Counties from 1891 to 1907, Inclusive.*

COUNTY	YEAR																
	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907
Anderson .....	1	1	1	1	2	1	1	1	1	1	1	1	3	3	3	3	3
Bledsoe .....	...	...	...	...	...	...	...	...	...	...	...	14	15	15	15	16	16
Campbell .....	6	3	3	4	4	2	2	2	3	2	2	3	2	2	1	1	1
Claiborne .....	11	6	5	5	5	6	6	5	4	4	3	2	1	1	2	2	2
Cumberland .....	14	14	14	14	14	13	13	13	13	12	12	11	10	10	14	14	14
Fentress .....	...	...	...	...	...	...	...	...	...	...	...	...	...	14	12	12	13
Franklin .....	12	12	12	12	13	14	14	14	15	15	...	...	...	...	...	...	...
Grundy .....	2	2	2	2	1	3	3	6	5	5	6	5	6	6	6	6	5
Hamilton .....	4	8	7	6	6	9	7	9	7	8	7	6	7	7	8	8	8
Marion .....	3	4	4	3	3	4	4	4	6	6	5	7	5	5	5	7	7
Morgan .....	8	11	10	11	11	5	5	3	2	3	4	4	4	4	4	4	4
Overton .....	...	...	...	...	...	...	...	...	...	...	15	15	13	13	13	13	15
Putnam .....	13	13	13	13	12	12	12	12	12	13	13	...	...	...	...	...	17
Rhea .....	5	7	9	8	10	11	10	7	8	7	9	8	8	8	9	9	9
Roane .....	9	9	11	9	9	8	8	10	9	10	10	10	11	11	10	11	11
Scott .....	7	5	6	7	7	7	11	11	11	11	11	12	12	12	11	10	10
Sequatchie .....	...	...	...	...	...	...	...	...	14	14	14	13	14	16	16	15	12
White .....	10	10	8	10	8	10	9	8	10	9	8	9	9	9	7	5	6

It will be observed from this statement that Anderson County, with the exception of the year 1895, maintained the lead from 1891 to 1902, inclusive, when the lead was assumed by the county of Claiborne, which it, however, maintained only for two years, when it was assumed by the county of Campbell, which it still holds, with Claiborne ranking second and Anderson third.

There is but little difference in the relative rank of coal producing counties for 1907 compared with 1906, except that Grundy has captured fifth position from White and Sequatchie has moved up from fifteenth to rank twelfth.

The following statement gives rank of coal producing States in the United States, first in quantity of product and second in value of product, with percentage of each:

*Rank of Coal Producing States in 1906, With Quantity and Value of Product, and Percentage of Each.*

PRODUCTION				VALUE			
Rank	STATE OR TERRITORY	Quantity (Short Tons)	Per Cent of Total Pro- duction	Rank	STATE OR TERRITORY	Value	Per Cent of Total Value
1	Pennsylvania.			1	Pennsylvania.		
	{ Anthracite .....	71,282,411	17.2		{ Anthracite .....	\$131,917,694	25.7
	{ Bituminous .....	129,293,206	31.2		{ Bituminous .....	130,290,651	25.4
2	West Virginia .....	43,290,350	10.5	2	Illinois .....	44,763,062	8.7
3	Illinois .....	41,480,104	10.0	3	West Virginia .....	41,051,939	8.0
4	Ohio .....	27,731,640	6.7	4	Ohio .....	30,346,580	5.9
5	Alabama .....	13,107,963	3.2	5	Alabama .....	17,514,786	3.4
6	Indiana .....	12,092,560	2.9	6	Indiana .....	13,116,261	2.6
7	Colorado .....	10,111,218	2.4	7	Colorado .....	12,735,616	2.4
8	Kentucky .....	9,653,647	2.3	8	Iowa .....	11,619,455	2.3
9	Iowa .....	7,266,224	1.8	9	Kentucky .....	9,809,938	1.9
10	Tennessee .....	6,259,275	1.5	10	Kansas .....	8,979,553	1.7
11	Wyoming .....	6,133,994	1.5	11	Wyoming .....	8,013,528	1.6
12	Kansas .....	6,024,775	1.5	12	Tennessee .....	7,667,415	1.5
13	Maryland .....	5,435,453	1.3	13	Maryland .....	6,474,793	1.3
14	Virginia .....	4,254,879	1.0	14	Missouri .....	6,118,733	1.2
15	Missouri .....	3,758,008	.9	15	Washington .....	5,908,434	1.1
16	Washington .....	3,276,184	.8	16	Indian Territory.....	5,482,366	1.1
17	Indian Territory.....	2,860,200	.7	17	Virginia .....	4,183,991	.8
18	New Mexico.....	1,964,713	.5	18	Montana .....	3,240,357	.6
19	Arkansas .....	1,864,268	.5	19	Arkansas .....	3,000,339	.6
20	Montana .....	1,829,921	.4	20	New Mexico.....	2,638,986	.5
21	Utah .....	1,772,551	.4	21	Michigan .....	2,427,404	.5
22	Michigan .....	1,346,338	.3	22	Utah .....	2,408,381	.5
23	Texas .....	1,312,873	.3	23	Texas .....	2,178,901	.4
24	Georgia .....	332,107	.1	24	Georgia .....	424,004	.1
25	North Dakota .....	305,689		25	North Dakota .....	451,382	
26	Oregon .....	79,731		26	Oregon .....	212,338	
27	{ California and			27	{ California and		
	{ Alaska.....	30,831	.1		{ Alaska .....	78,684	.1
28	Idaho .....	26,165		28	Idaho .....	224,238	
	Total .....	414,157,278	100.0		Total .....	\$513,079,809	100.0

a—Includes production of Nevada.

As to product as compared with 1905 Illinois receded from second in rank to that of third, giving away to West Virginia, which for several years has been gradually creeping up to the second place. Alabama captured fifth position from Indiana, while Tennessee captured tenth position in rank from Kansas.

The following statement shows quantity and value of coal in short tons produced in the United States for the year 1906, compared with the year 1905, with increases and decreases by States, and percentage of each:

*Coal Produced in the United States for the Year 1906, Compared With the Year 1905.*

STATE OR TERRITORY	1905		1906		Increase or Decrease, 1906		Percentage of Increase or Decrease, 1906	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Alabama .....	11,866,069	\$ 14,387,721	13,107,963	\$ 17,514,786	+ 1,241,894	+\$3,127,065	+10.5	+21.7
Arkansas .....	1,934,673	2,880,738	1,864,268	3,000,339	- 70,405	+ 119,601	- 3.6	+ 4.2
California and Alaska	80,824	395,975	30,831	78,684	- 49,993	- 317,291	-61.9	-80.1
Colorado .....	8,826,429	10,810,978	10,111,218	12,735,616	+ 1,284,789	+ 1,924,638	+14.6	+17.8
Georgia and N. Carolina	353,548	456,184	a332,107	a424,004	- 21,441	- 32,180	- 6.1	- 7.1
Idaho (b).....	5,882	11,846	6,165	24,238	+ 283	+ 6,392	+ 4.8	+35.8
Illinois .....	38,434,363	40,577,592	41,480,104	44,763,062	+ 3,045,741	+ 4,185,470	+ 7.9	+10.3
Indiana .....	11,895,252	12,492,255	12,092,560	13,116,261	+ 197,308	+ 624,006	+ 1.7	+ 5.0
Indian Ter....	2,924,427	5,145,358	2,860,200	5,482,366	- 64,227	+ 337,008	- 2.2	+ 6.5
Iowa .....	6,798,609	10,586,381	7,266,224	11,619,455	+ 467,615	+ 1,033,074	+ 6.9	+ 9.8
Kansas .....	6,423,979	9,350,542	6,024,775	8,979,553	- 399,204	- 370,989	- 6.2	- 4.0
Kentucky ....	8,432,523	8,385,232	9,652,647	9,509,938	+ 1,221,124	+ 1,424,706	+14.5	+17.0
Maryland .....	5,108,539	5,831,760	5,435,453	6,474,793	+ 326,914	+ 643,033	+ 6.4	+11.0
Michigan .....	1,473,211	2,512,697	1,346,338	2,427,404	- 126,873	- 85,293	- 8.6	- 3.4
Missouri .....	3,983,378	6,291,661	3,758,008	6,118,733	- 225,370	- 172,928	- 5.7	- 2.7
Montana .....	1,643,832	2,823,350	1,829,921	3,240,357	+ 186,089	+ 417,207	+11.3	+14.8
New Mexico...	1,649,933	2,190,231	1,964,713	2,638,986	+ 314,780	+ 448,755	+19.1	+20.5
N. Dakota....	317,542	424,778	305,689	451,382	- 11,853	+ 26,604	- 3.7	+ 6.3
Ohio .....	25,552,950	26,486,740	27,731,640	30,346,580	+ 2,178,690	+ 3,859,840	+ 8.5	+14.6
Oregon .....	109,641	282,495	79,731	212,338	- 29,910	- 70,157	-27.3	-24.8
Pennsylvania:								
Anthracite	77,659,850	141,879,000	71,282,411	131,917,694	- 6,377,439	- 9,961,306	- 8.2	- 7.0
Bituminous	118,413,637	113,390,507	129,293,206	130,290,651	+10,879,569	+16,900,144	+ 9.2	+14.9
Tennessee ....	5,766,690	6,577,881	6,259,275	7,667,415	+ 492,585	+ 1,089,534	+ 8.5	+16.6
Texas .....	1,200,684	1,968,558	1,312,873	2,178,901	+ 112,189	+ 210,343	+ 9.3	+10.7
Utah .....	1,332,372	1,793,510	1,772,551	2,408,381	+ 440,179	+ 614,871	+33.0	+34.3
Virginia .....	4,275,271	3,777,325	4,254,879	4,183,991	- 20,392	+ 406,666	- 0.5	+10.8
Washington ..	2,864,926	5,141,258	3,276,184	5,908,434	+ 411,258	+ 767,176	+14.4	+14.9
West Virginia	37,791,580	32,341,790	43,290,350	41,051,939	+ 5,498,770	+ 8,710,149	+14.6	+26.9
Wyoming .....	5,602,021	7,336,951	6,133,994	8,013,528	+ 531,973	+ 676,577	+ 9.5	+ 9.2
Total .....	392,722,635	\$476,537,294	414,157,278	\$513,079,809	+21,434,643	+36,542,515	+ 5.5	+ 7.7

a—Georgia only. b—Includes production of Nevada.

It will be observed from this statement that in a number of States the percentage of increase in values was much larger than the percentage of increase in product, and while the total net increase in product was 5.5 per cent, the total net increase in values amounted to 7.7 per cent.

### WORLD'S PRODUCTION OF COAL

The following statement gives the production of coal of the principal countries of the world for the years nearest the one under review, for which figures could be obtained.

For convenience the quantity of product is expressed in the unit of measurement existing in each country, and reduced for comparison to short tons of 2,000 pounds:

#### *The World's Production of Coal.*

COUNTRY	Usual Unit in Producing Countries	Equivalent in Short Tons
United States (1906) (long tons).....	369,783,284	414,157,278
Great Britain (1906) (long tons).....	251,067,628	281,195,743
Germany (1906) (metric tons).....	201,715,074	222,350,526
Austria-Hungary (1904) (metric tons).....	41,014,182	45,209,933
France (1906) (metric tons).....	34,313,645	37,823,931
Belgium (1906) (metric tons).....	23,610,740	26,026,119
Russia and Finland (1905) (metric tons).....	17,233,871	18,996,896
Japan (1905) (metric tons).....	11,630,000	12,819,749
Canada (1905) (short tons).....	8,775,933	8,775,933
India (1905) (long tons).....	8,417,739	9,427,863
New South Wales (1906) (long tons).....	7,626,362	8,541,525
Spain (1906) (metric tons).....	3,284,576	3,620,588
Transvaal (a) (1906) (long tons).....	2,751,136	3,081,272
New Zealand (1905) (long tons).....	1,535,756	1,776,047
Natal (1906) (long tons).....	1,238,713	1,387,359
Mexico (1906) (metric tons).....	767,864	846,186
Queensland (1905) (long tons).....	529,326	592,845
Holland (1904) (metric tons).....	466,997	514,771
Italy (1904) (metric tons).....	362,151	399,199
Sweden (1905) (metric tons).....	322,384	355,364
Victoria (1905) (long tons).....	155,135	173,751
Cape Colony (1904) (long tons).....	154,272	172,785
Tasmania (1905) (long tons).....	51,993	58,232
Other countries (b) (long tons).....	7,298,935	8,174,807
Total .....		1,106,478,707
Percentage of the United States .....		.37

a—Year ended June 30.

b—Includes China, Turkey, Servia, Portugal, United States of Colombia, Chile, Borneo and Labuan, Peru, Greece, etc.

The United States now produces 37 per cent of the coal supply of the world, and stands far in the lead of the world's coal producers.

For the year 1906 the United States produced 132,961,535 short tons, or 43.7 per cent more coal than Great Britain, and 191,806,752 short tons, or 85 per cent. more than Germany.

Exclusive of Great Britain the United States produced in 1906 more coal than all of the other countries of the world combined.

The following statement shows draft animals, explosives used and number of mine cars employed in the coal mines of Tennessee for 1907, by counties and districts:

*Draft Animals, Explosives and Mine Cars Used in Tennessee Coal Mines for 1907.*

COUNTY AND DISTRICTS	DRAFT ANIMALS			EXPLOSIVES USED		Mine Cars in Use
	In- side	Out- side	Total	Powder (kegs)	Dyna- mite (pounds)	
	45	46	47	48	49	50
<i>First District.</i>						
Bledsoe .....	6	2	8	917	400	65
Cumberland .....	23	7	30	2,544	8,925	202
Fentress .....	9	.....	9	.....	.....	169
Grundy .....	80	14	94	14,585	2,500	945
Marion .....	68	15	83	13,204	6,652	840
Overton .....	12	1	13	4,754	932	183
Putnam .....	2	.....	2	200	.....	10
Sequatchie .....	20	4	24	1,980	1,500	200
White .....	45	27	72	14,715	7,980	640
Total .....	265	70	335	52,899	28,889	3,254
<i>Second District.</i>						
Hamilton .....	86	14	100	15,243	10,500	1,021
Morgan .....	84	20	104	6,273	23,570	1,702
Rhea .....	71	8	79	2,320	1,680	464
Roane .....	46	7	53	3,968	3,188	340
Scott .....	39	17	56	10,836	3,850	568
Total .....	326	66	392	38,640	42,788	4,095
<i>Third District.</i>						
Anderson .....	119	37	156	12,416	18,984	1,779
Campbell .....	226	74	300	23,497	30,523	3,755
Claiborne .....	163	26	189	10,482	9,755	1,488
Total .....	508	137	645	46,395	59,262	7,022
Grand Total.....	1,099	273	1,372	137,934	130,939	14,371

The following statement gives the number and make of mining machines in use, quantity of coal mined with machines, and improvements made in the coal mines of Tennessee for 1907:

*Mining Machines, Coal Mined With Machines, and Improvements Made in Tennessee Coal Mines for 1907.*

COUNTY AND DISTRICT	MINING MACHINES IN USE, MAKE AND NUMBER											Coal Mined with Machines (Short Tons)	IMPROVEMENTS MADE		
	Pick					Chain Breast							Inside	Out-side	Total
	Harrison	Ing-Sargent	Sullivan	Other Kinds	Total Pick	Jeffrey Elec.	Sullivan	Goodman	Morgan-Gardner	Total Chain Breast	Grand Total				
51	52	53	54	55	56	57	58	58½	59	60	61	62	63	64	
First District.															
Bledsoe .....	..	..	..	..	..	..	..	..	..	..	.....	.....	\$ 250	\$ 250	
Cumberland .....	..	..	..	..	..	..	..	..	..	..	.....	.....	300	300	
Fentress .....	..	..	..	..	..	..	..	..	..	..	.....	.....	.....	.....	
Grundy .....	..	..	..	..	..	..	..	..	..	..	.....	\$ 400	1,300	1,700	
Marlon .....	..	6	..	..	6	..	..	..	..	6	50,000	4,000	10,357	14,357	
Overton .....	..	..	..	..	..	..	..	..	..	..	.....	600	.....	600	
Putnam .....	..	..	..	..	..	..	..	..	..	..	.....	.....	.....	.....	
Sequatchie .....	..	..	..	..	..	..	..	..	..	..	.....	3,000	25,000	28,000	
White .....	..	21	2	..	23	..	..	..	..	23	119,551	6,500	24,500	31,000	
Total .....	..	27	2	..	29	..	..	..	..	29	169,551	\$14,500	\$ 61,707	\$ 76,207	
Second District.															
Hamilton .....	..	..	..	..	..	..	..	..	..	..	.....	.....	.....	.....	
Morgan .....	..	5	..	..	5	2	..	..	..	2	7	23,569	\$ 9,200	\$ 3,180	\$ 12,380
Rhea .....	..	..	..	..	..	..	..	..	..	..	.....	200	100	300	
Rome .....	..	..	..	..	..	..	..	..	..	..	.....	600	700	1,300	
Scott .....	..	..	..	..	..	..	..	..	..	..	.....	8,700	2,042	10,742	
Total .....	..	5	..	..	5	2	..	..	..	2	7	23,569	\$18,700	\$ 6,022	\$ 24,722
Third District.															
Anderson .....	2	7	..	..	9	6	2	2	..	10	19	164,798	\$ 7,600	\$ 3,200	\$ 10,800
Campbell .....	44	17	7	2	70	2	3	1	3	9	79	334,858	34,985	27,492	62,477
Claiborne .....	..	..	..	..	..	1	..	2	..	3	3	24,015	3,000	12,300	15,300
Total .....	46	24	7	2	79	9	5	5	3	22	101	523,671	\$45,585	\$ 42,992	\$ 88,577
Grand total .....	46	56	9	2	113	11	5	5	3	24	137	716,791	\$78,785	\$110,721	\$189,506

The following statement shows analysis, name, thickness and elevation of seamworked, and daily capacity of such of the coal mines in Tennessee, as have embodied the statistics in their annual reports:

*Analysis, Name, Thickness, and Elevation of Seam Worked, and Average Daily Capacity.*

COUNTY AND NAME		MINE		ANALYSIS										SEAM				Av. Daily Capacity Short Tons
COUNTY AND NAME	LOCATION	OPERTAOR	Fixed Carbon Percent	Volatile Matter Percent	Ash Percent	Moisture Percent	Subphur Percent	Other Matter Percent	Name of Seam Worked			Elevation Above Sea Level (feet)	Thickness Inches					
									81	82	83							
<i>Anderson County.</i>																		
Anders Ridge .....	Briceville .....	Andy's Ridge Coal Co.....	58.00	37.00	3.00	2.00	.....	.....	.....	Coal Creek...	900	48	50					
Big Three .....	Oliver Springs.....	Big Three M. & M. Co.....	55.00	41.46	2.12	1.42	0.59	.....	.....	Coal Creek...	1,100	....	10					
Black Diamond No. 1.....	Coal Creek.....	Black Diamond Coal Co....	63.15	29.78	2.65	2.35	0.19	1.87	.....	Coal Creek...	900	44	900					
Black Diamond No. 5.....	Coal Creek.....	Black Diamond Coal Co....	63.15	29.78	2.65	2.35	0.19	1.87	.....	Coal Creek...	900	44	700					
Brookside .....	Pless .....	Royal Coal & Coke Co.....	60.17	35.54	2.40	1.29	0.60	.....	.....	Coal Creek...	1,044	52	175					
Cross Mt. No. 1.....	Briceville .....	Knoxville Iron Co .....	60.40	34.35	3.13	2.12	.....	.....	.....	Coal Creek...	1,006	46	800					
Eureka No. 2.....	Pless .....	Royal Coal & Coke Co.....	60.17	35.54	2.40	1.29	0.60	.....	.....	Coal Creek...	1,008	52	100					
Fraterville .....	Coal Creek.....	Coal Creek Coal Co.....	57.52	38.82	2.67	0.99	0.89	.....	.....	Coal Creek...	1,000	48	500					
Thistle .....	Coal Creek.....	Coal Creek Coal Co.....	57.98	38.14	2.50	1.38	.....	.....	.....	Coal Creek...	1,000	47	450					
Tennessee .....	Briceville .....	Tennessee Coal Co.....	63.42	31.47	3.34	1.77	0.43	.....	.....	Coal Creek...	960	45	500					
Windrock No. 1.....	Windrock .....	Windrock Coal & Coke Co..	59.32	34.77	5.04	1.45	0.72	0.42	.....	Dean .....	2,400	60	560					
<i>Bledsoe County</i>																		
Atpontley .....	Atpontley .....	Atpontley Coal Co.....	63.40	27.60	7.35	1.65	.....	.....	.....	Sewanee .....	1,500	36	200					
<i>Campbell County.</i>																		
Big Block.....	Cupp .....	Big Block Coal Co.....	57.45	31.61	2.04	1.85	1.05	.....	.....	Jellico .....	.....	30	35					
Block .....	Block .....	Block Coal & Coke Co.....	50.77	46.53	1.43	1.77	.....	.....	.....	Block .....	2,360	38	150					
Bowling, T. H.....	Caryville .....	Caryville Coal Co.....	56.64	40.28	3.08	0.78	0.82	.....	.....	Block .....	2,445	45	300					
Cambria .....	Pless .....	Royal Coal & Coke Co.....	60.17	35.54	2.40	1.29	0.60	.....	.....	Coal Creek...	1,186	38	200					
Chaska .....	Chaska .....	Chaska Coal Co.....	54.40	37.14	6.45	2.07	2.67	.....	.....	No. 3.....	1,400	48	175					
Davis' Creek.....	Cupp .....	Davis Creek Coal Co.....	52.54	41.13	1.04	2.30	1.00	.....	.....	Jellico .....	.....	40	125					
Fall's Branch.....	Woodridge .....	Fall's Branch Coal Co.....	60.60	35.44	1.60	2.86	.....	.....	.....	Jellico .....	1,225	36	350					
Gem .....	Peabody .....	LaFollette C., I. & Ry. Co..	56.25	41.36	1.72	0.67	0.65	.....	.....	Jordan .....	1,910	50	500					
Italian, B. G.....	Newcomb .....	Italian B. G. Coal Co.....	56.40	39.00	1.25	2.44	0.70	.....	.....	Blue Gem....	1,200	22	40					

COAL.

Analysis, Name, Thickness, and Elevation of Seam Worked, and Average Daily Capacity.—Continued.

MINE			ANALYSIS								STEAM				Av. Daily Capacity Short Tons
COUNTY AND NAME	LOCATION	OPERATOR	Fixed Carbon Per cent	Volatile Per cent	Ash Per cent	Moisture Per cent	Sulphur Per cent	Other Matter Per cent	Name of Seam Worked	Elevation Above Sea Level (feet)	Thickness Inches				
			69	70	71	72	73	74		81	82	83			
Campbell County—Con.															
Italy		Italy Coal Co.	57.45	37.61	2.04	1.85	1.05		Jellico	1,275	30	150			
Jameson, B. G.		Jellico B. G. Coal Co.	55.71	40.54	1.09	2.65			Blue Gem	1,200	24	250			
Kent		LaFollette C., I. & Ry. Co.	51.95	40.60	6.55	0.90			Kent	1,300	40	400			
Layne, B. G.		M. H. Layne.	56.40	39.00	1.26	2.44	0.70		Blue Gem	1,200	24	10			
Rector		Rector Coal Co.	53.50	41.41	2.02	2.25	0.82		Rector	1,700	48	150			
Remy		Remy Coal Co.	54.24	42.64	1.42	1.70	0.65		Rich Mt.		36	250			
Rex No. 1.		LaFollette C., I. & Ry. Co.	56.28	40.26	3.46	2.50	1.21		Rex	1,000	42	600			
Rex No. 2.		LaFollette C., I. & Ry. Co.	55.94	38.48	5.58	3.23	1.19		Rex	1,000	40	700			
Southern		So. Coal & Coke Co.	59.25	36.32	2.13	2.30	1.07		Jordan	1,910	55	400			
Speed		Blue Gem Coal Co.	51.27	44.79	1.24	2.70	0.90		Jellico	1,200	36	200			
Westbourne		Westbourne Coal Co.	56.25	41.36	1.72	0.67	0.78		Log Mountain		46	400			
Wooldridge		Wooldridge-Jellico Coal Co.	60.60	35.44	1.60	2.36			Jellico	1,225	34	500			
Clatsop County.															
Bryson Mt.		Bryson Mt. Coal Co.	60.87	34.63	2.43	1.63	0.43		Mingo	1,650	55	1,000			
Fork Ridge No. 3.		Fork Ridge Coal & Coke Co.	64.00	30.40	2.60	2.40	0.60		Lo'er Hignite	2,500	48	50			
Fork Ridge No. 1.		Fork Ridge Coal & Coke Co.	59.83	37.19	1.40	0.88	0.70		Mingo	1,700	54	500			
King Mt.		King Mt. Coal Co.	57.04	39.90	1.96	1.10			Jellico	1,425	38	75			
Mingo Nos. 1-2.		Mingo Coal & Coke Co.	57.89	37.25	3.40	0.88	0.58		Mingo	1,700	60	225			
Mingo No. 3.		Mingo Coal & Ooke Co.							Poplar Lick	2,200	48	80			
Nicholson No. 2.		Nicholson Coal Co.	54.60	38.10	5.40	1.10	0.80		Jack Rock	1,300	65	400			
Nicholson No. 3.		Nicholson Coal Co.	55.10	36.30	6.30	1.20	1.10		Lo'er Hignite	1,500	50	300			
Ralston No. 2.		Ralston Coal Co.	55.89	39.97	3.40	1.02	0.58		Klondyke	2,000	51	100			
Ralston No. 3.		Ralston Coal Co.	59.29	37.00	2.83	0.88	0.58		Ralston	2,300	66	150			
Reliance Nos. 1-2.		Reliance Coal & Coke Co.	57.95	40.40	1.35	0.30			Mingo	1,600	60	500			
Standard		Standard Coal & Coke Co.	57.04	39.90	1.96	1.10			Jellico	1,425	40				
Sterling		Sterling Coal & Coke Co.	66.00	27.00	6.00	1.00	1.00		Sterling	2,800	66	700			
Yellow Creek No. 2.		Yellow Creek Coal Co.	60.51	34.50	3.99	1.00			Jack Rock	2,275	48	200			

COAL.

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<i>Cumberland County</i>									
Clear Creek.....	Isoline .....	Clear Creek Coal Co.....	53.86 42.20	2.21	1.73	.....	Isoline .....	1,900	40
Fall Creek.....	Ozone .....	Fall Creek Collieries.....	63.70 30.76	4.82	0.72	0.40	Up. Sewanee.....	1,800	60
Renfro .....	Renfro .....	Renfro Coal & Coke Co.....	68.27 28.32	2.32	1.03	0.06	Sewanee .....	1,800	42
<i>Fentress County.</i>									
Wildor .....	Wildor .....	Fentress Coal & Coke Co.....	45.52 35.99	13.26	1.61	3.61	Bon Air 2.....	1,550	42
<i>Grundy County</i>									
Brushy Ridge.....	Tracy City.....	Nunly Ridge Coal Co.....	61.68 29.73	7.65	1.04	.....	Sewanee .....	1,900	42
Clouse Hill .....	Tracy City.....	Sewanee Coal & Coke Co.....	59.88 31.32	7.50	1.30	0.85	Sewanee .....	1,950	30
Coalmont A.....	Coalmont .....	Sewanee Coal & Coke Co.....	59.88 31.32	7.50	1.30	0.85	Sewanee .....	1,916	31
Fiat Branch.....	Tracy City.....	Fiat Branch Coal Co.....	66.80 34.57	7.43	1.20	0.66	Sewanee .....	1,900	33
Ramsey .....	Tracy City.....	Tennessee Con. Coal Co.....	61.68 29.73	7.55	1.04	.....	Sewanee .....	1,900	40
Reid Hill.....	Tracy City.....	Tennessee Con. Coal Co.....	61.68 29.73	7.55	1.04	.....	Sewanee .....	1,919	42
Roddy Springs.....	Tracy City.....	Nunly Ridge Coal Co.....	61.68 29.73	7.55	1.04	.....	Sewanee .....	1,900	42
<i>Hamilton County.</i>									
Big Soddy .....	Soddy .....	New Soddy Coal Co.....	61.22 27.40	10.11	1.27	0.47	No. 9.....	1,254	28
Davis .....	Soddy .....	New Soddy Coal Co.....	60.44 29.18	7.16	2.10	1.12	No. 7.....	1,343	30
Montlake .....	Montlake .....	Montlake Coal Co.....	64.92 26.34	8.74	.....	1.84	No. 10.....	1,650	36
Sale Creek.....	Sale Creek.....	Sale Creek Coal & Coke Co.	60.29 31.27	7.02	1.42	0.60	No. 2.....	875	42
Soddy Nos. 1-2.....	Soddy .....	New Soddy Coal Co.....	60.44 29.18	7.16	2.10	1.12	No. 7.....	1,268	27
<i>Marion County.</i>									
Battle Creek.....	Orme .....	Battle Creek Coal & C. Co..	62.15 33.88	2.45	1.00	0.52	Bat. Creek 3	1,550	72
Etna No. 1.....	Whiteside .....	New Etna Coal Co.....	68.92 26.90	2.45	1.02	0.71	Kelly .....	1,860	32
Etna No. 2.....	Whiteside .....	New Etna Coal Co.....	70.17 23.26	4.85	0.32	1.40	Etna .....	1,360	40
Thomas, No. 1.....	Whitwell .....	Tennessee Con. Coal Co.....	60.60 30.30	6.00	.....	.....	Sewanee .....	1,782	36
<i>Morgan County.</i>									
Big Brushy.....	Petros .....	Big Brushy Coal & Coke Co.	55.74 36.65	3.53	2.04	2.04	Brushy Mt...	1,600	42
Big Mt.....	Oliver Springs...	Poplar Creek Coal Co.....	54.08 41.16	2.64	2.12	1.69	Coal Creek...	1,150	54
Bowling, H. B.....	Coalfield .....	H. B. Bowling Coal Co.....	55.72 40.89	2.12	0.79	1.10	Coal Creek...	1,000	58
Brushy Mt. No. 1....	Petros .....	State of Tennessee.....	62.31 32.32	5.37	.....	0.81	Brushy Mt...	1,620	34
Eagle .....	Oliver Springs..	Eagle Coal Co.....	57.10 40.33	1.40	1.17	1.01	Poplar Creek	1,125	36
Jackson .....	Oliver Springs..	Craig-Jackson Coal Co.....	57.10 40.33	1.40	1.17	1.01	Coal Creek...	1,150	40
Middle Creek.....	Oliver Springs..	Oliver Coal Co.....	50.71 44.81	2.15	0.25	2.08	Coal Creek...	750	40
Winter's Gap.....	Oliver Springs..	Winter's Gap Coal Co.....	60.14 35.17	2.60	1.30	0.79	Poplar Creek	1,000	40
<i>Overton County.</i>									
Brier Hill.....	Crawford .....	Brier Hill Collieries.....	58.94 34.65	3.24	2.35	0.82	Bon Air 2...	1,567	36
Obey City.....	Obey City .....	Obey City Coal Co.....	53.90 38.98	5.60	1.52	1.83	Bon Air 2...	1,500	42

Analysis, Name, Thickness, and Elevation of Seam Worked, and Average Daily Capacity—Continued.

MINE			ANALYSIS								SEAM			Av. Daily Capacity Short Tons
COUNTY AND NAME	LOCATION	OPERATOR	Fixed Carbon	Volatile Matter	Ash	Moisture	Subbit	Other	Name of Seam Worked	Elevation Above Sea Level (feet)	Thickness Inches			
			Per cent	Per cent	Per cent	Per cent	Per cent	Per cent						
			69	70	71	72	73	74	81	82	83	86		
Putnam County														
Monterey .....	Monterey .....	Monterey Coal Co.....	54.00	34.00	10.00	.....	1.00	.....	Crawford ...	1,800	36	400		
Rhea County.														
Fox No. 1.....	Montague .....	Fox Coal Co.....	60.57	34.23	3.77	1.43	0.51	.....	No. 2.....	950	24	100		
Fox No. 2.....	Montague .....	Fox Coal Co.....	60.24	28.97	9.45	1.34	0.82	.....	No. 5.....	1,250	30	400		
Nelson .....	Dayton .....	Dayton Coal & Iron Co.....	48.35	25.10	26.55	.....	0.76	.....	Nelson .....	952	54	175		
Richland .....	Dayton .....	Dayton Coal & Iron Co.....	59.20	31.00	12.40	.....	0.99	.....	Richland ....	987	22	70		
Roane County														
Old .....	Rockwood .....	Roane Iron Co.....	54.99	28.35	16.66	.....	0.67	.....	Sewanee ....	1,082	54	600		
Scott County.														
Glen Mary.....	Glen Mary .....	Glen Mary Coal Co.....	61.63	36.73	1.64	.....	0.29	.....	Glen Mary 4. ....	1,470	30	250		
Jake's Branch.....	Almy .....	Pine Knot Coal Co.....	57.00	36.75	3.25	2.00	0.60	0.40	Paint Rock 4. ....	1,400	30	175		
Lehigh No. 5.....	Helenwood ...	Scott County Coal Co.....	50.05	42.94	7.01	.....	.....	.....	No. 4.....	1,500	36	75		
LeMoyné .....	Isaham .....	LeMoyné Coal Co.....	57.01	38.64	3.99	0.36	0.72	.....	No. 4.....	1,200	36	.....		
Paint Rock No. 3....	Almy .....	Paint Rock Coal Co.....	57.00	37.00	3.25	2.00	0.60	0.15	No. 5.....	1,500	28	150		
Stanley .....	Fogal .....	Stanley Coal Co.....	57.00	36.75	3.25	2.00	0.60	0.40	Paint Rock 4. ....	1,400	32	275		
Sequatchie County														
Douglass .....	Dunlap .....	Southern Steel Co.....	58.85	29.50	10.55	1.10	0.86	.....	Sewanee ....	1,660	48	500		
White County.														
Bon Air.....	Bon Air.....	Bon Air Coal & Iron Co.....	57.00	37.00	4.90	1.10	.....	.....	Bon Air.....	1,800	36	250		
Clifty Creek.....	Clifty Creek....	Clifty Creek Coal Co.....	.....	.....	.....	.....	.....	.....	Seam 5 ab'y Limestone	1,600	37	493		
Eastland No. 2.....														
Ravenscroft .....	Ravenscroft ...	Bon Air Coal & Iron Co....	.....	.....	.....	.....	.....	.....	Sewanee ....	.....	48	600		
		Bon Air Coal & Iron Co....	.....	.....	.....	.....	.....	.....	No. 3.....	1,800	54	800		

The following statement shows strikes and suspensions at the coal mines in Tennessee during 1907, giving name and location of mine, number of men involved, number of days lost to each man, total number of days lost and cause assigned:

*Strikes and Suspensions for 1907.*

COUNTY	NAME OF MINE	DURATION	Number of Men Involved	Number of Days Lost per Man	Total Number of Days Lost	CAUSE ASSIGNED
Campbell .....	Mary-Anna .....	Apl. 29-May 27..	104	26	2704	Wages for taking top.
Morgan .....	Butler .....	Sept. 15-Oct. 1 ..	65	13	845	Wage scale.
Morgan .....	Daniel .....	December .....	8	6	48	Reduction of wages.
Scott .....	Paint Rock .....	Oct. 1-9 .....	125	8	1000	Wage settlement.
Scott .....	Lehigh .....	September .....	44	12	528	Wage settlement.

**RECAPITULATION.**

Total number of days lost.....	5,125
Total wages lost to employees.....	\$10,691
Total loss in coal product (short tons).....	13,581
Total loss in coal values.....	\$16,569

During 1906 the number of days lost amounted to 1,790; total wages lost to employes amounted to \$3,631; total loss in coal product amounted to 4,528 short tons, and total loss in coal values amounted to \$5,433.

This wholesome condition of affairs has existed since 1905, and is one upon which both miner and operator should be congratulated.

There were other short suspensions and short time work, due to shortage of cars and adverse trade conditions that are not included in the above figures.

## COAL MINE ACCIDENTS IN TENNESSEE, 1907

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There were thirty-one fatal accidents in Tennessee coal mines for 1907. As compared with 1906 this is a decrease of two in number, and a decrease of 0.27 of 1 per cent. on every thousand employed, the death rate for 1907 being 2.79 per cent. per 1,000 employed, as against 3.06 per cent. per 1,000 employed during 1906.

There were 6,940,911 short tons of coal mined during the year, which required the services of 11,098 employees.

The number of tons of coal mined for each life lost for 1907 was 223,900 short tons, while for 1906 there was one life lost for every 190,077 short tons of coal product. It will be observed that in addition to the decrease in the death rate per 1,000 employed there is also a decrease in the death rate based upon the tonnage of coal product.

The death rate for the United States and Canada, per 1,000 employed, for the five-year period, beginning with 1897, was 2.91 per cent., and for the five-year period beginning with 1902 was 3.31 per cent.

The death rate for Tennessee for 1907, per thousand employed, of 2.79 per cent. is 0.12 per cent. lower than for the five-year period for the United States and Canada, beginning with 1897, and 0.52 per cent lower than for the five-year period of the United States and Canada beginning with 1902, and 0.21 lower than the rate for the United States and Canada for the fifteen-year period beginning with 1892. Considering the extension of the works in the various mines and the number of comparatively new mines, which must necessarily employ some new and inexperienced men, and the introduction of electricity and coal-cutting machinery, this decrease in the death rate is indeed gratifying.

While there has not been as much improvement done during 1907 as was done in 1906 there has been much improvement made in sanitary conditions, as well as devices and appliances affording miners greater safety and facility in entering and leaving the works.

From Table No. 1 it will be observed that at least six miners were killed having less than one year's experience, which is about 20 per cent., that twenty, or about 65 per cent., were killed by falling slate or other falling substances; that three, or 10 per cent., were killed by mine cars; that two were killed by electricity, and two were killed by gas explosion, and two were killed by premature explosions of powder.

The accidents caused by falling substances were largely in excess of those of any other cause, and are principally due to the employment of inexperienced men and negligence on the part of the miner, who not infrequently becomes too careless and fails to properly timber his working place, despite the importunities of this department and the constant admonition of the mine foremen and others in authority. The percentage of deaths from falling substances has increased from 60 per cent. for 1906 to 65 per cent. for 1907. Ten, or 50 per cent. of the deaths occurring on account of falling substances occurred in rooms, while the other ten deaths from this cause occurred in entries or gang-ways.

This department has endeavored to thoroughly impress upon the mine foremen the grave importance of securing the roof in working places, believing that the removal of causes producing single accidents is of greater importance than those producing accidents of greater proportions.

The reduction of accidents caused by blown out shots of three for each of the years 1907 and 1906, as compared with 1905, is attributable to special attention being directed in each report of the department to the chief causes thereof.

In order that continued good results may be obtained they are herein reproduced.

The chief causes of blown out or windy shots are as follows:

(1) The overcharge of powder; (2) an overburdened shot, where the resistance is too great; (3) the hole being too deep for the undercutting; (4) when shots are not properly tamped; (5) when coal is shot from the solid.

The fatality rate in the coal mines of Tennessee has assumed its natural condition since the passage of the mining law of 1903.

There are still, however, more men being killed annually by falling substances and otherwise, than should be with our tonnage, and every mine management should take up the question at once and make determined effort to lessen the dangers attendant to the operation of their mine.

This can be done only through the vigorous enforcement of carefully prepared mining rules, the rigid enforcement of mine discipline, and diligent attention to the condition of the roof by mine officials, and a full appreciation on the part of the miner of the dangerous surroundings when the roof is not properly supported.

For the purpose of calling the attention of those interested more particularly to this important question, the following tables are submitted concerning the mining fatalities in the State of Tennessee, and in the United States and Canada, giving such detailed statistics in reference thereto as appear interesting:

TABLE No 1.—Showing fatal accidents in Tennessee coal mines for 1907, with name and occupation of person killed, name of mines arranged alphabetically by counties, experience in mining, station in life (married or single), number of children, and cause of accident.

TABLE No. 2.—Showing a general recapitulation of fatal accidents in Tennessee coal mines for 1907, giving the number killed by counties and districts, number by mine, number by occupation and number by cause of accident.

TABLE No 3.—Showing fatal accidents in Tennessee coal mines from 1894 to 1907, inclusive, giving number killed, number of wives made widows, number of children made fatherless, average number of employes, average number of employes to each life lost, total number of tons of coal mined, number of tons of coal mined for each life lost, and total number of tons of coal mined by each employe.

TABLE No 4.—Showing non-fatal accidents in Tennessee coal mines for 1907 by counties, giving name of mines and operators, name and occupation of person injured, date of accident, experience in mining, and cause and extent of injury.

TABLE No 5.—Showing a general recapitulation of non-fatal accidents in Tennessee coal mines for 1907, giving the number injured by counties and districts, name of mine, occupation and cause.

TABLE No 6.—Showing total number of fatal accidents in the coal mines of the United States and Canada from 1897 to 1906, inclusive. This table shows an increase from 947 in 1897 to 2,078 in 1906.

TABLE No 7.—Showing number of persons killed per 1,000 employed in the coal mines of the United States and Canada from 1897 to 1906, inclusive. This table shows an increase in the death rate from 2.34 per cent. in 1897 to 3.16 per cent. in 1906, and an increase from 2.34 per cent. in 1894 to 3.14 as the average death rate for the ten-year period, 1897-1906.

TABLE No 8.—Showing fatal accidents in the coal mines of the United States and Canada for 1906, compared with the average for the five previous years. This shows a decrease from 3.34 per cent. per 1,000 employed for the five-year period 1901-1905, to 3.16 per cent. for 1906.

TABLE No 9.—Showing a fifteen-year record of fatal accidents in the coal mines of the United States and Canada from 1892 to 1906, inclusive, giving number of persons employed, number killed, and rate per 1,000 for each of the years under observation.

The statistics for Tables Nos. 6, 7, 8, and 9 were obtained from the *Engineering and Mining Journal*, of 505 Pearl Street, New York, through an able and exhaustive article written by Mr. Frederick L. Hoffman, an actuary and expert mining statistician of Newark, N. J.

#### NOTE.

There were three fatal accidents occurring at the copper mines of the Ducktown Sulphur & Copper Company, Ltd., and 4 fatal accidents occurring at the Tennessee Copper Company mines.

There were also 2 fatal accidents occurring at the iron ore mines of the Brown Mining Company at Cardiff, one at the Red River Furnace Company iron ore mine, at Pomp, Dickson County, and one at the Globe Phosphate Company operations in Maury County.

The following statement shows fatal accidents in Tennessee coal mines for the year 1907, with name and occupation of persons killed, name of mine arranged alphabetically by counties, experience in mining and cause of accident:

Table No. 1. *Fatal Accidents in Tennessee Coal Mines for 1907.*

NAME OF COUNTY AND MINE	NAME OF PERSON KILLED	DATE	Occupation	Experience	Married or Single	Number of Children	CAUSE OF ACCIDENT
<i>Anderson County.</i>							
Windrock .....	Joseph McCoy.....	Aug. 17.	Motor....	1 Yr.	M	1	Motor car.
Windrock .....	Sam Russell.....	Nov. 1...	Miner...	2 Yr.	M	4	Gas; blown out shot.
<i>Campbell County.</i>							
Bear Wallow.....	John Shelton.....	July 14..	Miner...	18 Yr.	M	...	Gas burns; (entry.)
Bowling.....	Louis Cheetwood...	Mch. 14..	Miner...	4 Yr.	S	...	Falling slate.
Falls Branch.....	B. N. Hughes.....	May 13..	Track...	4 Yr.	M	7	Falling slate ;(old entry
Gem.....	Mitchell Stepp.....	June 17..	Miner...	8 Mo.	M	1	Coal shot explosion.
Rector.....	Will Brown.....	May 22..	Miner...	.....	S	...	Falling slate; entry.
Rich Mt.....	M. G. Roush.....	June 12..	Miner...	2 Mo.	M	1	Falling slate; (room.)
<i>Clatsborne County</i>							
Bryson Mt.....	Grover Cadle.....	Sept. 14.	Miner...	.....	S	...	Falling slate; (room.)
Fork Ridge.....	Doc Epps.....	July 18..	Coupler..	7 Mo.	S	...	Electric wire; 250 v.
Rogers.....	Jack Bagger.....	.....	Miner...	3 Mo.	M	...	Falling slate; a. c.
Yellow Creek.....	J. R. Mason.....	May 21..	Miner...	6 Mo.	M	1	Falling slate.
<i>Fentress County.</i>							
Wilder.....	Will Whitaker.....	Feb. 8...	Driver...	.....	M	4	Car derailment.
<i>Grundy County.</i>							
East Fork.....	Walter Wilcox.....	Feb 16...	Miner...	10 Yr.	M	...	Falling rock; (entry.)
Street Hill.....	J. R. Brooks.....	Oct. 3...	Miner...	20 Yr.	M	7	Falling slate; (room.)
<i>Marion County.</i>							
Etna.....	James Daffron.....	June 1...	Miner...	10 Yr.	M	7	Fall off horseback.
Thomas.....	William Goff.....	Mar. 17..	Pumper...	.....	M	1	Heart failure.
Thomas.....	James Kilgore.....	Sept. 18..	Miner...	3 Yr.	M	1	Falling slate; (room.)
<i>Morgan County.</i>							
Blizzard .....	Harrison Graves.....	Jan. 6...	Miner...	.....	M	4	Falling slate; (room.)
Bowling.....	Joe DeFur.....	Dec. 23..	Miner...	.....	M	3	Gas explosion; (entry.)
Bowling.....	Ed Langford.....	Nov. 9...	Miner...	.....	M	2	Falling slate.
Bushy Mt.....	George Campbell...	Oct. 1...	Miner...	.....	S	...	Falling slate; (room.)
Bushy Mt.....	Will Francis.....	Jan. 5...	Miner...	.....	S	...	Falling slate; (room.)
Bushy Mt.....	Ernest Johnson.....	July 16..	Miner...	.....	S	...	Electric wire.
Bushy Mt.....	Tom Richardson.....	Dec. 21..	Miner...	.....	S	...	Falling slate; (room.)
Bushy Mt.....	Tom Smith.....	May 1...	Miner...	.....	S	...	Falling slate; (room.)
<i>Overton County.</i>							
Brier Hill.....	J. B. Copeland.....	May 5...	Trapper...	.....	S	...	Mine cars.
Obey City.....	John Elmore.....	Sept. 10..	Miner...	5 Mo.	S	...	Falling slate.
<i>Scott County.</i>							
Terry.....	Richard Chitwood..	Apr. 27..	Miner...	8 Yr.	M	6	Falling slate; (room.)
<i>Sequatchie County.</i>							
Douglas 2.....	J. Waters.....	Sept. 11..	Track...	2 Mo.	S	...	Incline car.
<i>White County.</i>							
Clifty Creek.....	Dan Lusk.....	Nov. 5...	Miner...	.....	M	1	Falling coal.

#### RECAPITULATION.

Total number of fatal accidents.....	31
Total number of wives made widows.....	19
Total number of children made fatherless.....	51

The following statement is a general recapitulation of fatal accidents in Tennessee coal mines for 1907, showing number by counties and districts, name of mine, occupation, and number, by causes of accident:

Table No. 2—*Fatal Accidents in Tennessee Coal Mines for 1907.*

COUNTY	No.	NAME OF MINE	No.	OCCUPATION	No.	CAUSE OF ACCIDENT	No.
Anderson.....	2	Bear Wallow.....	1	Coupler .....	1	Electricity .....	2
Campbell.....	6	Blizzard .....	1	Driver .....	1	Explosions (gas).....	2
Claiborne.....	4	Bowling .....	1	Miner .....	24	Explosions (powder)...	2
Fentress.....	1	Bowling H. B.....	2	Motorman ....	1	Falling substances....	20
Grundy.....	2	Brier Hill.....	1	Pumpman ....	1	Heart failure.....	1
Marion.....	3	Brushy Mt.....	5	Trackman ....	2	Incline car.....	1
Morgan.....	8	Bryson Mt.....	1	Trapper .....	1	Mine cars.....	3
Overton.....	2	Clifty Creek.....	1				
Scott.....	1	Douglass .....	1				
Sequatchie.....	1	East Fork.....	1				
White.....	1	Etna' .....	1				
		Falls Branch.....	1				
		Fork Ridge.....	1				
		Gem .....	1				
		Obey City.....	1				
		Rector .....	1				
		Rich Mt.....	1				
		Rogers .....	1				
		Street Hill.....	1				
		Terry .....	1				
		Thomas .....	2				
		Wilder .....	1				
		Windrock .....	2				
		Yellow Creek.....	1				
Total .....	31	Total .....	31	Total .....	31	Total .....	31

#### RECAPITULATION.

##### *First District.*

Fentress .....	1
Grundy .....	2
Marion .....	3
Overton .....	2
Sequatchie .....	1
White .....	1
Total .....	10

##### *Second District.*

Morgan .....	8
Scott .....	1
Total .....	9

##### *Third District.*

Anderson .....	2
Campbell .....	6
Claiborne .....	4
Total .....	12
Grand Total.....	31

This statement gives miscellaneous statistics of fatal accidents in the coal mines of Tennessee from 1894 to 1907, inclusive, showing total number killed, number of wives made widows, number of children rendered fatherless, average number of employes, number of employes to each life lost; total number of tons coal mined, and total number of tons mined to each employe.

Table No. 3.—*Statistics of Fatal Accidents in Tennessee Coal Mines from 1894 to 1907, Inclusive.*

	Number Killed	No. of Wives Made Widows	No. of Children Made Fatherless	Average Number of Employes	Average No. of Emp. to Each Life Lost	Coal Mined (Short Tons)	No. of Tons Coal Mined to Each Life Lost	No. of Tons Coal Mined by Each Employe
1894 .....	12	.....	.....	5,542	461	2,180,879	181,740	393.52
1895 .....	<i>a</i> 37	.....	.....	5,120	138	2,319,720	62,695	453.07
1896 .....	22	.....	.....	6,531	296	2,663,714	121,078	407.85
1897 .....	10	.....	.....	6,337	633	2,880,994	288,099	454.63
1898 .....	18	.....	.....	7,820	411	3,084,748	162,499	394.40
1899 .....	20	.....	.....	7,694	384	3,736,134	186,806	485.50
1900 .....	10	.....	.....	8,691	869	3,904,048	390,404	453.50
1901 .....	<i>b</i> 44	20	62	8,418	191	3,785,672	86,038	449.70
1902 .....	<i>c</i> 226	137	324	8,759	39	4,232,332	18,727	483.20
1903 .....	26	13	26	9,673	372	4,810,758	185,029	499.40
1904 .....	28	10	16	9,972	356	4,847,242	173,123	486.08
1905 .....	29	13	30	10,517	363	5,552,576	191,468	527.96
1906 .....	33	16	41	10,736	325	6,272,457	190,077	584.24
1907 .....	31	19	51	11,098	358	6,940,911	223,900	625.42

*a*—Twenty-five of these were killed by coal dust explosion at the mines of the Dayton Coal and Iron Company.

*b*—Twenty of these were killed in the explosion of the Richland mine, operated by the Dayton Coal and Iron Company.

*c*—Two hundred of these were killed in the explosion of Nelson and Fraterville mines, operated by the Coal Creek Coal Company, at Coal Creek.

The fatal accident death rate per 1,000 employes for 1907 is 2.79 per cent. as against 3.06 per cent for 1906.

There was only one person killed in every 358 employes, whereas for 1906 there was one killed for every 325 employes.

There were 223,900 short tons of coal mined for each life lost during 1907, whereas during 1906 there was one person killed for 190,077 short tons of coal mined.

Each employe produced 625 short tons of coal during 1907, whereas during 1906 each employe only produced 584 short tons of coal.

The following statement shows non-fatal accidents in Tennessee coal mines for the year 1907, giving county, name of mine, name and occupation of persons injured and cause and extent of injury:

Table No. 4.—*Non-fatal Accidents in Tennessee Coal Mines for 1907.—Continued.*

NAME OF COUNTY AND MINE	NAME OF PERSON INJURED	DATE	OCCUPATION	CAUSE AND EXTENT OF INJURY
<i>Anderson County</i>				
Andlers Ridge.....	G. W. Nelson.....	Jan. 26...	Miner.....	Slate; back and hips, slight.
Andlers Ridge.....	John Vowell.....	Feb. 26...	Miner.....	Slate; two ribs fractured.
Black Diamond 1...	P. J. Davis.....	Dec. 21...	Miner.....	Powder explosion; hands burned.
Black Diamond 1...	John Disney.....	Aug. 10...	Trapper.....	Mine car; foot badly cut.
Black Diamond 1...	E. A. Edwards.....	Dec. 10...	Fireman....	Manhead of boiler; finger broke.
Black Diamond 1...	C. R. Rutherford...	July 29...	Driver.....	Mule kick on head.
Black Diamond 1...	Ed Selber.....	July 16...	Driver.....	Mine car; leg badly cut.
Black Diamond 1...	Ed Sheterly.....	June 14...	Driver.....	Mule kick; jaw fractured.
Black Diamond 1...	Mr. Yichaiell.....	Nov. 11...	Miner.....	Roof; back, serious.
Black Diamond 5...	J. W. Alexander...	July 25...	Miner.....	Slate; thumb broken.
Black Diamond 5...	John T. Cox.....	Feb. 7...	Miner.....	Loading coal; finger broken.
Black Diamond 5...	P. J. Davis.....	July 15...	Miner.....	Slate; arm broken.
Black Diamond 5...	E. L. Foster.....	Sept. 9...	Miner.....	Slate; back and hips.
Black Diamond 5...	L. Hatmaker.....	Feb. 18...	Miner.....	Roof; nose broken.
Black Diamond 5...	Marion McGee....	June 17...	Driver.....	Mine cars; leg broken.
Black Diamond 5...	Jesse Rhea.....	Sept. 18...	Timber.....	Slate; back and foot.
Black Diamond 5...	S. Vandergriff....	Jan. 22...	Driver.....	Mine car; thumb cut.
Black Diamond 5...	H. M. Whitson....	April 27...	Miner.....	Roof; nose, cheek and head.
Black Diamond 5...	John Ayres, Sr....	July 15...	Miner.....	Slate; rib and side.
Black Diamond 6...	Dan Owens.....	July 24...	Miner.....	Fire clay; shoulder and side.
Black Diamond 6...	W. Williams.....	July 23...	Miner.....	Slate; ribs and side.
Buck Mt.....	J. P. Wease.....	Nov. 1...	Fire boss....	Pump; three fingers cut off.
Cross Mt., No. 1...	Geo. Ault.....	Aug. 2...	Machine....	Slate; foot crushed slightly.
Cross Mt., No. 1...	Andrew Johnson...	Oct. 18...	Miner.....	Slate; leg and back bruised.
Cross Mt., No. 1...	C. R. White.....	Dec. 13...	Miner.....	Mining machine; finger.
Eureka, No. 2.....	S. M. Lewallen....	June 30...	Yard.....	Sheaves pulling out; thigh.
Eureka, No. 2.....	W. Toliver.....	June 7...	Contractor...	Collar bone broken.
Fraterville.....	J. A. Alred.....	Jan. 12...	Track.....	Slate; slight.
Fraterville.....	Albert Gurley....	Mch. 15...	Driver.....	Mine cars; slight.
Highland.....	Ab Elkins.....	Jan. 24...	Miner.....	Dynamite; arm and leg.
Middle Ridge.....	Condie Maiden....	Dec. 3...	Miner.....	Slate; back bruised.
Middle Ridge.....	Bud Majors.....	Oct. 12...	Miner.....	Slate; finger.
Middle Ridge.....	E. W. Mulkey.....	Nov. 19...	Miner.....	Slate; right foot.
Tennessee.....	Harvey Duncan...	Feb. 5...	Miner.....	Haulage rope; knee.
Tennessee.....	M. Hatmaker.....	June 26...	Miner.....	Slate; leg bruised.
Tennessee.....	Jim Johnson.....	July 25...	Track.....	Rail slipped; thumb.
Tennessee.....	Goldie Phillips...	Aug. 2...	Laborer.....	Slate; leg and side.
Tennessee.....	Amon Polston....	Jan. 12...	Miner.....	Capboard; thumb cut.
Tennessee.....	F. Smith.....	Sept. 13...	Miner.....	Slate; back, slight.
Thistle.....	Sam Moody.....	July 18...	Driver.....	Mine cars; finger.
<i>Campbell County</i>				
Bear Wallow.....	Mr. Malone.....	July 14...	Miner.....	Gas explosion.
Block.....	Jeff Bunch.....	Aug. 31...	Machine....	Mining machine; slight.
Bowling.....	C. C. Ellis.....	April 17...	Miner.....	Hand mashed.
Cambria.....	Cal Disney.....	Jan. 29...	Miner.....	Gas; face and hand.
Chaska.....	Frank Slavey....	Oct. 29...	Driver.....	Mule kick; cheek.
Elk Hart.....	Allen Balden....	June 10...	Miner.....	Slate; foot mashed.

Table No. 4.—Non-fatal Accidents in Tennessee Coal Mines for 1907.—Continued.

NAME OF COUNTY AND MINE	NAME OF PERSON INJURED	DATE	OCCUPATION	CAUSE AND EXTENT OF INJURY
<i>Campbell Co.—Con.</i>				
Elk Valley.....	Joe Gooden.....	May 6....	Miner.....	Slate; foot mashed.
Elk Valley.....	H. Kenton.....	Nov. 20...	Miner.....	Slate; back.
Elk Valley.....	H. Massingill.....	Aug. 14...	Miner.....	Slate; back.
Falls Branch.....	A. L. Herrill.....	Dec. 13...	Laborer.....	Mine cars; hand.
Italian B. G.....	Fred Berkshire.....	Oct. 31...	Blacksmith...	Leg broken.
Italy.....	Henry Kelly.....	Oct. 18...	Driver.....	Mine car; thigh broken.
Italy.....	W. Petree.....	Oct. 18...	Driver.....	Mine car; leg broken.
Italy.....	B. Preti.....	Feb. 26...	Miner.....	Slate; shoulder and leg.
Jackson.....	W. Ash.....	Mch. 13...	Miner.....	Slate; spine injured.
Jackson.....	Frank Kidwell.....	Mch. 13...	Helper.....	Slate; leg and hip.
Jameson.....	Jasper Dilk.....	Mch. 20...	Miner.....	Mine cars; foot and ankle.
Kimberly.....	John Blackwell.....	Feb. 15...	Miner.....	Slate; spine, slight.
Layne.....	Charles Baird.....	Nov. 27...	Miner.....	Powder explosion; leg broken.
Remy.....	Charles Ballou.....	Mch. ....	Miner.....	Slate; head, slight.
Remy.....	R. Higworth.....	Mch. ....	Machine.....	Slate; back, slight.
Remy.....	W. A. Thomas.....	Mch. ....	Miner.....	Slate; slight.
Rex No. 1.....	S. P. Gibson.....	.....	Miner.....	Powder explosion; face.
Rich Mt.....	Barney Hale.....	June 12...	Miner.....	Slate; leg broken.
Southern.....	Elijah Hale.....	July 8....	Miner.....	Slate; sides.
Speed B. G.....	Silas Mosier.....	June 25...	Miner.....	Horseback; hips.
Westbourne.....	S. Ballard.....	Mch. 6....	Miner.....	Slight cut on face.
Westbourne.....	Louis Frank.....	Mch. 7....	Miner.....	Slightly bruised.
Westbourne.....	E. Heinigar.....	May 8....	Trapper.....	Mine car; slight.
Woodward.....	John Woods.....	Apr. ....	Miner.....	Slate; foot mashed.
<i>Claiborne County</i>				
Fork Ridge.....	W. Baker.....	Oct 30....	Miner.....	Mine car; foot bruised.
Fork Ridge.....	C. G. Hill.....	July 5....	Fireman.....	Boiler house; steam, leg.
Fork Ridge.....	Dave Hord.....	May 17...	Miner.....	Slate; back bruised.
Fork Ridge.....	Albert Jackson.....	Mch. 18...	Driver.....	Tail chain; hand cut.
Fork Ridge.....	M. Kintacz.....	Dec. 12...	Miner.....	Slate; leg broken.
Fork Ridge.....	Andy Patton.....	Sept 30...	Miner.....	Arm, near wrist.
Fork Ridge.....	Andy Patton.....	Dec. 12...	Driver.....	Mine car; hips bruised.
Fork Ridge.....	Egbert Patton.....	Aug. 21...	Laborer.....	Mine car; hand bruised.
Fork Ridge.....	W. Piela.....	Dec. 14...	Miner.....	Slate; back and shoulders.
Fork Ridge.....	V. S. Suavely.....	Nov. 4....	Miner.....	Slate; nose, slight.
Fork Ridge.....	S. A. Smith.....	Sept. 16...	Machine.....	Machine; hand mashed.
Fork Ridge.....	Jeff Warren.....	Sept. 20...	Track.....	Motor car; foot.
Fork Ridge.....	Joe Watson.....	Mch. 18...	Miner.....	Slate; back and hip.
Fork Ridge.....	John Wilks, Jr.....	Apr. 1....	Trapper.....	Trap door; three fingers.
Fork Ridge.....	John Wilks, Sr.....	Apr. 9....	Miner.....	Falling coal; ankle.
Fork Ridge.....	John Wilks, Sr.....	Aug. 24...	Miner.....	Slate; hand bruised.
King Mt.....	George Carter.....	Sept. 10...	Miner.....	Mine cars; finger bruised.
King Mt.....	Tom Terrell.....	Nov. 1....	Miner.....	Slate; back, slight.
Mingo, No. 1.....	Sam Townsley.....	Oct. 18...	Miner.....	Falling coal; leg broken.
Mingo, No. 2.....	John Donelson.....	Oct. 18...	Miner.....	Falling coal; spine.
Nicholson.....	Henry Herald.....	Dec. 24...	Driver.....	Mine car; arm broken.
Nicholson.....	George Kelly.....	Oct. 17...	Driver.....	Mine car; leg broken.
Nicholson.....	Charles Nelms.....	Mch. 30...	Carpenter....	Adze; foot cut.
Pruden.....	S. C. Carroll.....	Feb. 16...	Miner.....	Powder explosion; face, slight.
Pruden.....	C. B. Leath.....	June 3....	Carpenter....	Leg broken.
Pruden.....	W. Murray.....	Aug. ....	Miner.....	Head cut, slight.

Table No. 4.—*Non-fatal Accidents in Tennessee Coal Mines for 1907.—Continued.*

NAME OF COUNTY AND MINE	NAME OF PERSON INJURED	DATE	OCCUPATION	CAUSE AND EXTENT OF INJURY
<i>Glaiborne Co.—Con.</i>				
Pruden.....	George Vaughn.....	Dec. 9....	Miner.....	Head and eye bruised.
Yellow Creek.....	James Asbury.....	Sept. 23...	Track.....	Slate; back and knee.
Yellow Creek.....	M. C. Chadwell.....	Mch. 29...	Miner.....	Mine car; hip bruised.
Yellow Creek.....	Bob Crumley.....	Aug. 12....	Driver.....	Rope; breast and skull.
Yellow Creek.....	John Evans.....	May 16....	Miner.....	Slate; leg broken.
Yellow Creek.....	Gus Mitchell.....	Mch. 29....	Miner.....	Slate; foot and toe.
Yellow Creek.....	Harmon Noe.....	Jan. 3....	Miner.....	Mine cars; knee and ankle.
Yellow Creek.....	Harmon Noe.....	Feb. 20....	Miner.....	Mine car; breast.
Yellow Creek.....	W. M. Spradling....	Nov. 15....	Miner.....	Slate; leg broken.
Yellow Creek.....	George Thompson....	July 15....	Miner.....	Slate; back, slight.
<i>Cumberland County</i>				
Clear Creek.....	George Ashburn....	Mch. 1....	Miner.....	Mine cars; thumb.
Clear Creek.....	Will Atterson.....	Mch. 1....	Driver.....	Mine cars; hand.
Clear Creek.....	James Bell.....	May 29....	Driver.....	Strain.
Clear Creek.....	George Brown.....	Mch. 1....	Driver.....	Mine car, coal, slight.
Clear Creek.....	Will Lee.....	Feb. 12....	Miner.....	Slight.
Clear Creek.....	Sam Nix.....	Sept. 10....	Miner.....	Slate; foot bruised.
Clear Creek.....	W. Ransom.....	Aug. 10....	Miner.....	Falling coal; arm.
Fall Creek.....	Charles Hayes.....	Mch. 28....	Laborer.....	Mine car; back.
Waldensia.....	A. J. Davis.....	Sept. 20....	Driver.....	Mine cars; foot, slight.
<i>Fentress County</i>				
Wilder.....	James Snodgrass....	.....	Miner.....	Slate; scalp.
Wilder.....	Morgan Stulz.....	.....	Driver.....	Kicked by mule, slight.
<i>Grundy County</i>				
Brushy Ridge.....	N. T. McIlhany.....	Feb. 18....	Miner.....	Slate; back bruised.
Clouse Hill.....	Andrew Holt.....	June 15....	Miner.....	Slate; back.
East Fork.....	B. Aldmon.....	Feb. 16....	Miner.....	Slate; head and hip.
Ramsey, No. 2.....	Sam Henson.....	Jan. 13....	Driver.....	Ankle sprained.
<i>Hamilton County</i>				
Big Soddy.....	W. E. Brumett.....	Mch. 13....	Miner.....	Slate; back bruised.
Big Soddy.....	Tom Lynch.....	Mch. 23....	Driver.....	Mine car; foot bruised.
Big Soddy.....	Bud Odom.....	Apr. 28....	Dumper.....	Mine car; foot mashed.
Big Soddy.....	S. Steinberger.....	Oct. 14....	Miner.....	Slate; ankle, slight.
Big Soddy.....	G. Williams.....	Sept. 5....	Driver.....	Stuck nail in foot.
Montlake.....	Thomas Guffy.....	Oct. 15....	Miner.....	Slate; slight.
Montlake.....	O. H. Shannon.....	Aug. 21....	Miner.....	Slate; slight.
Montlake.....	Andy West.....	Nov. 30....	Haulage.....	Mine car wreck; ankle.
Sale Creek.....	James Keith.....	May 11....	Driver.....	Leg broke.
Sale Creek.....	W. Newman.....	Mch. 19....	Driver.....	Foot hurt.
Sale Creek.....	Emmet Reel.....	Oct. 10....	Miner.....	Shoulder.
Sale Creek.....	Tom Troutman.....	Sept. 26....	Driver.....	Foot hurt.
Soddy.....	Loss Abernathy....	Mch. 26....	Miner.....	Slate; leg, 30 days.
Soddy.....	M. E. Card.....	May 28....	Miner.....	Falling coal; collar bone broken.
Soddy.....	A. D. Chandler.....	July 30....	Coke.....	R. R. cars; arm mashed.
Soddy.....	W. Ellison.....	Oct. 19....	Miner.....	Slate; head, 60 days.
Soddy.....	Ned Jones.....	Dec. 2....	Driver.....	Kicked by mule.
Soddy.....	L. McMillan.....	Oct. 26....	Engineer....	Engine; hand mashed.
Soddy.....	George Parrott.....	Apr. 16....	Shifter.....	Leg cut off.
Soddy.....	Sam Pavey.....	Dec. 6....	Miner.....	Thrown by mule, arm broken.
Soddy.....	David Rees.....	June 6....	Miner.....	Slate; leg broken.
Soddy.....	Will Wilcox.....	Oct. 11....	Driver.....	Mine car; shoulder.

Table No. 4.— *Non-fatal Accidents in Tennessee Coal Mines for 1907.—Continued.*

NAME OF COUNTY AND MINE	NAME OF PERSON INJURED	DATE	OCCUPATION	CAUSE AND EXTENT OF INJURY
<i>Marion County</i>				
Etna.....	John Brazille.....	Jan. 7....	Miner.....	Slate; shoulder.
Etna.....	Henry Ganger.....	Dec. 27....	Miner.....	Wrecked cars; foot and hip.
Etna.....	Tom Samples.....	Jan. 7....	Miner.....	Slate; slight bruises.
Thomas.....	George Keefe, Jr....	Aug. 2....	Trapper.....	Mine cars; legs and side.
Thomas.....	D. H. Loach.....	Feb. 9....	Driver.....	Mine cars; broken toe.
Thomas.....	V. L. McIntire.....	Feb. 5....	Miner.....	Slate; foot mashed.
Thomas.....	J. W. Payne.....	Apr. 11....	Slate.....	Gasoline tank flange; 2 fingers
Thomas.....	J. R. Pickett.....	Dec. 4....	Miner.....	Mine car; leg broken.
Thomas.....	Joe Smith.....	Mch. 17..	Pumper ....	Lamp; scalp burned.
<i>Morgan County</i>				
Big Brushy.....	Matt Armes.....	Apr. 24....	Miner.....	Slate; slight.
Big Brushy.....	W. Williams.....	May 10....	Miner.....	Slate; back.
Big Mt.....	Sol Russell.....	Sept. 4....	Miner.....	Mine cars; slate; slight.
Blizzard.....	W. C. Hartney.....	Jan. 6....	Miner.....	Slate; knee.
Blizzard.....	Charles Roddy.....	Dec. 13....	Miner.....	Slate; neck.
Bowling, No. 1....	Geo. Brumett.....	Dec. 3....	Miner.....	Falling coal; head and back.
Bowling, No. 1....	Chas. Colston.....	Dec. 23....	Miner.....	Gas explosion; slight burns.
Bowling, No. 1....	Joe Johnson.....	Dec. 23....	Miner.....	Gas explosion; serious.
Brushy Mt.....	Leslie Carter.....	Jan. 6....	Miner.....	Slate; leg.
Brushy Mt.....	Will Jenkins.....	July 5....	Miner.....	Slate; fracture vertebra.
Brushy Mt.....	Ernest Johnson.....	July ....	Miner.....	Slate.
Brushy Mt.....	Tom Jones.....	May 25....	Miner.....	Slate; foot injured.
Brushy Mt.....	George Lawrence.....	Jan. 5....	Miner.....	Slate; leg broken.
Brushy Mt.....	Robert Lee.....	July 8....	Miner.....	Slate; leg amputated.
Brushy Mt.....	Walter Leonard.....	July 17....	Driver.....	Mine cars; leg lacerated.
Brushy Mt.....	Jack Morley.....	Aug. 3....	Miner.....	Slate; small fracture.
Brushy Mt.....	Jim Perles.....	April 25..	Miner.....	Slate; leg broken.
Brushy Mt.....	Walter Shields.....	June 5....	Miner.....	Slate; shoulder.
Brushy Mt.....	Bob Sublett.....	Feb. 12....	Driver.....	Mine cars; leg broken.
Brushy Mt.....	Frank Wells.....	July 11....	Miner.....	Slate; back badly hurt.
Brushy Mt.....	Ike Williams.....	Nov. 17....	Miner.....	Slate; foot crushed.
Middle Creek.....	D. McGlothe .....	Nov 13....	Miner.....	Roof; hip crushed, slight.
<i>Overton County</i>				
Brier Hill.....	James Roark.....	Jan 16....	Miner.....	Mine car; finger crushed.
Brier Hill.....	I. D. Worley.....	Jan. 21....	Miner.....	Mine car; finger crushed.
<i>Rhea County</i>				
Fox, No. 1.....	Pete Carpenter.....	Sep. 18....	Miner.....	Scratches; face and nose.
Fox, No. 1.....	Thomas Jones.....	Aug. 1....	Driver.....	Mine car; back and rib.
Fox, No. 1.....	Luther Keedy.....	April 30..	Driver.....	Mine car; foot.
Fox, No. 2.....	John Queen.....	Jan. 2....	Driver.....	Mine car; ankle.
Nelson.....	George Lemons.....	Dec. 29....	Miner.....	Roof; head.
Spring City.....	Clate Dodson.....	.....	Timber.....	Timbers; ankle, slight.
<i>Roane County</i>				
Old.....	Tom Bryson.....	Dec. 10....	Miner.....	Gas explosion.
Old.....	Elbert Fritts.....	March 14..	Miner.....	Gas explosion; face and arms.
Old.....	John Rains.....	Aug. 22....	Driver.....	Mine cars; leg cut.
Old.....	W. Raulston.....	July 16....	Miner.....	Slate; slight.
Old.....	W. S. Scarbrough.....	Dec. 10....	Foreman....	Gas explosion; face and arms.
Old.....	B. Tarwater.....	June 8....	Pump.....	Gasoline burns; slight.
Old.....	H. M. Taylor.....	May 14....	Miner.....	Mine car; leg broken.

Table No. 4.—*Non-fatal Accidents in Tennessee Coal Mines for 1907.—Continued.*

NAME OF COUNTY AND MINE	NAME OF PERSON INJURED	DATE	OCCUPATION	CAUSE AND EXTENT OF INJURY
<i>Scott County</i>				
Glen Mary.....	Lige Sims.....	March 12..	Miner.....	Mine cars; leg bruised.
Robbins.....	Charles West.....	Dec. 24...	Miner.....	Slate; collar bone.
<i>White County</i>				
Clifty Creek.....	Chas. Elbridge.....	March ...	Driver.....	Mine cars; collar bone.
Eastland.....	Chas. Cannon.....	Aug. 5...	Driver.....	Mine cars; leg broken.
Ravenscroft.....	Tom Bramlett.....	Oct. 15...	Miner.....	Falling coal; back.
Ravenscroft.....	Louis Roberson.....	Oct. 15...	Miner.....	Falling coal; rib fractured.

## RECAPITULATION.

First District.....	30
Second District.....	59
Third District.....	106
Total .....	195

The following statement is a general recapitulation of non-fatal accidents in Tennessee coal mines for 1907, showing number by counties, number by mines, number by occupation and number by causes of accident:

L Table No. 5.—Recapitulation of Non-fatal Accidents, 1907.

COUNTY	NO.	NAME OF MINE	NO.	OCCUPATION	NO.	CAUSE OF ACCIDENT	NO.
Anderson.....	40	Andlers Ridge....	2	Blacksmith.....	1	Adze .....	1
Campbell.....	30	Bear Wallow.....	1	Carpenter .....	2	Boiler House.....	4
Clalborne.....	36	Big Brushy.....	2	Coke .....	1	Falling substances	89
Cumberland.....	9	Big Mt.....	1	Driver .....	1	Gas explosions.....	7
Fentress.....	2	Big Soddy.....	5	Dumper .....	1	Gasoline burns.....	2
Grundy.....	4	Black Diamond 1....	7	Engineer .....	1	Mine cars.....	54
Hamilton.....	22	Black Diamond 5....	9	Fire boss.....	1	Mining machines.....	3
Marion.....	9	Black Diamond 6....	3	Firemen .....	2	Mule .....	6
Morgan.....	22	Blizzard.....	2	Foremen .....	1	Oil burns.....	1
Overton.....	2	Block.....	1	Haulage .....	38	Pump .....	1
Rhea.....	6	Bowling, J. H.....	1	Laborer .....	4	Railroad cars.....	1
Roane.....	7	Bowling, H. B.....	3	Machinists.....	4	Timber .....	1
Scott.....	2	Brier Hill.....	2	Miners .....	122	Not given.....	25
White.....	4	Brushy Mt.....	13	Pump .....	2		
		Brushy Ridge.....	1	Shifter .....	1		
		Buck Mt.....	1	Slate .....	1		
		Cambria.....	1	Timber .....	3		
		Chaska.....	1	Trackmen .....	4		
		Clear Creek.....	7	Trapper .....	4		
		Clifty .....	1	Yardmen .....	1		
		Clouse Hill.....	1				
		Cross Mt.....	3				
		East Fork.....	1				
		Eastland .....	1				
		Elk Hart.....	1				
		Elk Valley.....	3				
		Etna .....	3				
		Eureka 2.....	2				
		Fall's Branch.....	1				
		Fall Creek.....	1				
		Fork Ridge.....	16				
		Fox 1.....	3				
		Fox 2.....	1				
		Fraterville .....	2				
		Glen Mary.....	1				
		Highland .....	1				
		Italian, B. G.....	1				
		Italy .....	3				
		Jackson .....	2				
		Jameson .....	1				
		Kimberly .....	1				
		King Mt.....	2				
		Layne .....	1				
		Middle Creek.....	1				
		Middle Ridge.....	3				
		Mingo 1.....	1				
		Mingo 2.....	1				
		Montlake .....	3				
		Nelson .....	1				
		Nicholson .....	3				
		Old .....	7				
		Pruden .....	4				
		Ramsey 2.....	1				
		Ravenscroft .....	2				
		Remy .....	3				
		Rex 1.....	1				
		Rich Mt.....	1				
		Robbins .....	1				
		Sale Creek.....	4				
		Soddy .....	10				
		Southern .....	1				
		Speed, B. G.....	1				
		Spring City.....	1				
		Tennessee .....	6				
		Thistle .....	1				
		Thomas .....	6				
		Waldensia .....	1				
		Westbourne .....	3				
		Wilder .....	2				
		Woodward .....	1				
		Yellow Creek.....	9				
<b>Total .....</b>	<b>195</b>	<b>Total .....</b>	<b>195</b>	<b>Total .....</b>	<b>195</b>	<b>Total .....</b>	<b>195</b>

The following statement shows number of persons killed by accident in coal mines of the United States and Canada from 1897 to 1906, inclusive:

Table No. 6.—*Fatal Accidents in Coal Mines in the United States and Canada from 1897 to 1906, Inclusive.*

STATES	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1897 to 1906
Alabama .....	38	45	40	37	41	50	57	84	185	96	673
Colorado .....	35	24	41	29	55	73	40	89 <sup>a</sup>	59	88	533
Illinois .....	69	75	84	94	99	99	156	157	199	155	1,187
Indiana .....	16	22	16	18	24	24	55	34	47	31	287
Indian Territory.....	22	17	25	40	44	60	33	30	44	39	354
Iowa .....	21	26	20	29	26	55	21	31	24	37	290
Kansas .....	6	17	16	22	26	27	36 <sup>b</sup>	16	36	30	232
Kentucky .....	12	6	7	17	21	19	25	19	31	39	196
Maryland .....	5	4	5	7	12	11	13	12	13	7	89
Michigan .....	.....	<sup>b</sup>	4	10	6	6	8	7	8	6	55
Missouri .....	8	9	14	10	15	10	17	11	11 <sup>d</sup>	16	121
New Mexico.....	7	7	15	15	9	17	17	15	5	9	116
Ohio .....	40	52	57	68	72	81	114	118	131	127	860
{ Pennsylvania:											
{ Anthracite .....	423	411	461	411	513	300	518	595	644	557	4,833
{ Bituminous .....	150	199	258	265	301	456	402	536	479	477	3,523
Tennessee .....	10	19	20	10	53	226	26	28	29	33	454
Utah .....	3	3	.....	209	10	8	7	9	7	7	263
Washington .....	7	9	45	33	27	34	25	31	13 <sup>d</sup>	13	237
West Virginia.....	62	90	89	141	134	120	159	140	194	268	1,397
British Columbia .....	6	7	11	17	102	139	42	37	12	15	388
Nova Scotia.....	7	7	19	21	14	19	31	19	20	28	185
Total deaths .....	947	1,049	1,247	1,503	1,604	1,834	1,802	2,018	2,191	2,078	16,273

<sup>a</sup>—Underground accidents only.

<sup>b</sup>—Six months only.

<sup>d</sup>—Nine months only, period ending Sept. 30.

The following statement shows number of persons killed per 1,000 employed in the coal mines of the United States and Canada from 1897 to 1906, inclusive:

Table No. 7.—*Fatal Accidents Per 1,000 Employed in the United States and Canada, 1897 to 1906, Inclusive.*

STATES	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1897 <sup>c</sup> to 1906
Alabama .....	3.07	4.55	3.10	2.59	2.90	2.79	2.94	4.71	10.74	5.23	4.36
Colorado .....	4.99	3.23	5.60	3.99	6.88	8.11	3.89	8.26	a4.96	7.32	5.86
Illinois .....	2.04	2.14	2.27	2.39	2.24	2.15	3.13	2.87	3.36	2.49	2.57
Indiana .....	2.00	2.63	2.07	1.82	1.98	1.83	3.64	2.70	2.53	1.61	2.30
Indian Territory.....	6.34	4.82	6.24	7.59	8.35	9.62	5.42	3.63	5.76	4.81	6.12
Iowa .....	2.45	3.38	2.49	2.22	1.97	4.23	1.59	1.90	1.36	2.20	2.23
Kansas .....	0.71	1.95	1.57	2.06	2.28	2.70	3.61	b3.09	2.97	2.95	2.39
Kentucky .....	1.55	0.67	0.83	2.06	2.14	1.58	1.85	1.37	2.06	2.33	1.71
Maryland .....	1.17	0.89	1.08	1.32	2.23	1.99	2.29	2.11	2.09	1.13	1.67
Michigan .....	.....	.....	c4.88	6.11	3.26	4.24	2.54	2.58	2.93	2.83	3.16
Missouri .....	1.22	1.22	1.80	1.31	1.63	1.09	1.85	1.47	1.06	d1.65	1.43
New Mexico .....	5.13	3.71	7.98	7.44	4.81	10.11	7.26	7.61	2.35	3.82	5.95
Ohio .....	1.39	1.77	2.03	2.14	2.15	2.16	2.75	2.57	2.96	2.73	2.35
Pennsylvania:											
Anthracite .....	2.83	2.89	3.28	2.86	3.47	2.03	3.41	3.69	3.83	3.35	3.18
Bituminous .....	1.72	2.27	2.82	2.43	2.56	3.37	2.65	3.45	2.90	2.76	2.77
Tennessee .....	1.58	2.43	2.60	1.15	6.10	25.80	2.69	2.81	2.38	3.07	5.00
Utah .....	4.17	4.38	.....	138.96	5.81	3.24	3.21	4.06	5.14	3.69	16.57
Washington .....	2.48	2.70	13.60	7.79	5.59	7.83	5.13	6.69	2.73	d2.52	5.60
West Virginia .....	2.89	3.86	3.55	5.03	4.14	3.75	4.03	3.08	4.24	4.98	4.03
British Columbia .....	2.47	2.34	2.91	4.22	25.67	34.65	9.85	8.31	2.72	3.12	9.91
Nova Scotia.....	1.35	1.56	3.39	3.17	1.83	2.36	2.79	1.63	1.86	2.31	2.22
Total average.....	2.34	2.59	2.98	3.25	3.24	3.49	3.14	3.37	3.44	3.16	3.14

a—Underground accidents only.

b—Six months only.

c—Nine months only, period ending September 30.

The following statement shows fatal accidents in coal mines in the United States and Canada for 1906, compared with the five previous years; also corresponding rates per 1,000 employed, with increases and decreases:

Table No. 8.—*Fatal Accidents in Coal Mines in the United States and Canada in 1906 Compared With the Five Previous Years.*

STATES	No. Persons Killed Yearly Average		Rate Per 1,000 Employed		Rate of Increase or De- crease Per 1,000 Em- ployed
	1901-1905	1906	1901-1905	1906	
Alabama .....	83	96	4.82	5.23	+ 0.41
Colorado .....	63	88	6.33	7.32	+ 0.99
Illinois .....	142	155	2.80	2.49	- 0.31
Indiana .....	37	31	2.57	1.61	- 0.96
Indian Territory.....	42	39	6.30	4.81	- 1.49
Iowa .....	31	37	2.14	2.20	+ 0.06
Kansas .....	b 31	30	2.90	2.95	+ 0.05
Kentucky .....	23	39	1.79	2.33	+ 0.54
Maryland .....	12	7	2.14	1.13	- 1.01
Michigan .....	7	6	2.73	2.83	+ 0.10
Missouri .....	13	a 16	1.41	1.65	+ 0.24
New Mexico.....	13	9	6.30	3.82	- 2.48
Ohio .....	103	127	2.55	2.73	+ 0.18
Pennsylvania:					
Anthracite .....	514	557	3.31	3.35	+0.04
Bituminous .....	435	477	3.00	2.76	- 0.24
Tennessee .....	72	33	7.34	3.07	- 4.27
Utah .....	8	7	4.12	3.69	- 0.43
Washington .....	26	a 13	5.55	2.52	- 3.03
West Virginia.....	149	268	3.83	4.98	+ 1.15
British Columbia.....	66	15	15.73	3.12	-12.61
Nova Scotia .....	21	28	2.09	2.31	+ 0.22
Total .....	1,891	2,078	3.34	3.16	- 0.18

a—Nine months only. b—Four and one-half years only.

The following statement shows a 15-year record of fatal accidents in coal mines of the United States and Canada from 1892 to 1906, inclusive; also average accident rate for each 5-year period, and average accident rate as a whole, per 1,000 employed:

Table No. 9.—*Fifteen-year Record of Fatal Accidents in Coal Mines of the United States and Canada, 1892-1906, Inclusive.*

YEAR	Employees	No. Killed	Accident Rate Per 1,000 Em- ployed	YEAR	Employees	No. Killed	Accident Rate Per 1,000 Employed
1892 .....	342,744	859	2.51	1902 ....	525,443	1,834	3.49
1893 .....	382,133	965	2.53	1903 ....	574,210	1,802	3.14
1894 .....	385,579	957	2.48	1904 ....	598,678	2,018	3.37
1895 .....	395,549	1,057	2.67	1905 ....	637,522	2,191	3.44
1896 .....	401,874	1,120	2.79	1906 ....	658,189	2,078	3.16
1897 .....	405,433	947	2.34	1892-1896 ....	1,907,879	4,958	2.60
1898 .....	405,600	1,049	2.59	1897-1901 ....	2,185,123	6,350	2.91
1899 .....	417,415	1,247	2.98	1902-1906 ....	2,994,042	9,923	3.31
1900 .....	462,308	1,503	3.25	1892-1906 ....	7,087,044	21,231	3.00
1901 .....	494,367	1,604	3.24				

## WAGE SCALES

The following wage scale agreements between the United Mine Workers of America and the Coal Operators' Association in Tennessee were kindly furnished by Mr. J. S. McCracken, Secretary-Treasurer of the United Mine Workers of America, with offices at rooms 15 and 16, Fouche Block, Knoxville, Tenn.

As to wages paid miners and other employes in the coal mines of Tennessee, active during 1907, other than the mines embraced in this statement, special attention is directed to the table of statistics embraced in this report, giving the average wages paid per day to each class of employes.

### AGREEMENTS.

#### NEW SODDY COAL COMPANY.

The New Soddy Coal Company and the miners and other employes of said company, through their Executive Committee appointed by them to act for them, and the officials of the United Mine Workers of America, hereby adopt as the agreements for the ensuing year, ending September 30, 1908, the following, viz.:

First—Nine hours shall constitute a day's work for all classes of labor, for which a scale of wages is made in this contract. A nine hour day means nine hours' work in the mines, at usual working place, for all classes of day labor and miners. This shall be exclusive of the time required in reaching the working place and departing from the same at night. The drivers shall take their mules to and from the stable, and the time in so doing shall not include any part of the day's work. An accommodation trip will be run in No. 1 mine, starting at 6:30 a. m. Firing time for less than a full day to be 30 minutes after run stops. For a full day firing time will be 4 p. m.

Second—Two thousand pounds shall constitute a ton. Prices for mining shall be as follows, viz.:

- Coal 36 inches and over, 50c per ton.
- Coal 30 to 36 inches, 56c per ton.
- Coal 24 to 30 inches, 60c per ton.
- Coal 18 to 24 inches, 70c per ton.
- Pillar coal, 56c per ton.

Third—Yardage prices shall be as follows, viz.: The standard price of entry, either tight or gob, will be \$2.05 per yard for 5 feet high and 8 inches width of roadway; \$2.85 per yard for 5 feet 6 inches high and 8 feet of roadway. When coal is under 24 inches in thickness, \$4.50 per yard; airways, 55c per yard. Billie rib yardage, 80c in coal only; cut throughs, 50c per yard; but when more than 18 feet of solid coal is cut, special price. When rooms are turned 9 feet wide and 16 feet in depth of neck, \$3.25 per room; wet places to be paid 2.1c per ton extra. Only such places shall be termed wet in which the water will run from drill holes when bored horizontally and in proper place, or when water stands at face so as to require bailing. Cut throughs to be measured from one road prop to far side of coal.

## SCALE OF WAGES.

	Per hour.	Per day.
Driving single mule .....	21.4c	\$ 1.93
Driving two mules .....	23.1c	2.08
Driving three mules .....	24.3c	2.17
Driving four mules .....	25.3c	2.27
Boss track layer .....	30.2c	2.71
Assistant track layer .....	21.4c	1.93
Trappers .....	7.6c	.68
Sheavemen, inside .....	21. c	1.89
Sheavemen, outside .....	18.9c	1.70
Rope rider, inside .....	25.6c	2.30
Rope rider, outside .....	15.7c	1.42
Inside labor, on rock .....	18.3c	1.65
Engineers (per month).....		51.45
Firemen .....	17.4c	1.57
Outside labor .....	13.6c	1.23
Inclinemen .....	15.7c	1.42
Dumpers .....	15.1c	1.36
Tipplemen .....	18.1c	1.63
Blacksmith .....	26.2c	2.36
Pick sharpeners .....	22.5c	2.03
Blacksmith helpers .....	16.3c	1.47
Washerman .....	20.3c	1.83
Fireman at washer .....	18.9c	1.70
Labor on coke yard .....	14. c	1.26
Charging coke ovens .....	3.5c per oven.	
Pulling ovens .....	35c, 39c, 41c per oven.	
Night watchman .....		1.57
Outside driver, 10c per day less than inside. Boy driver under 16 years of age, 35c per day less than regular rates.		

Fourth—Any miner called upon to do company work shall be paid at the rate of 27c per hour, or \$2.43 per day.

Fifth—Pay-day shall be on the second Saturday of each month for work done last half, and on last Saturday for work done on the first half of the month. Men absenting themselves from work on the first day of any month, or on the Monday succeeding pay-day, will be discharged.

Sixth—Blacksmithing will be 35c per month per turn. This is to cover the sharpening and dressing of tools only.

Seventh—Cut—all employes whose wages are regulated by this scale shall be cut for dues and assessments through the office out of the first five days' work performed in each month, the same to be paid to the proper person or persons authorized to receive the same; the dues and assessments not to exceed \$1.00 per month without special written order of each employe. Initiation fees are hereby guaranteed to be uniform throughout District No. 19, and that the payment of same shall be prorated through sixty days, if necessary.

Eighth—House coal to be as follows:

Lump coal, \$2.50 per ton.

Nut coal, \$1.50 per ton.

Run of mine coal, \$1.00 per ton, in town limits.

Ninth—No committee shall visit any man at his working place except when accompanied by the mine foreman, and then only to settle a grievance.

Tenth—It is fully understood and agreed by the parties to this agreement that all employes of this company are required to work six days per week, when called on to do so, excepting legal holidays, half days on pay-days, and April 1. Any employe desiring to be idle for a day, must secure permission of his foreman in advance, unless prevented by sickness or other unavoidable cause. Any employe being idle without notifying his foreman shall, for the first offense, be suspended from work three days; for the second offense be suspended for five days; and anyone being idle more than three days in any one month may be suspended for one month, or discharged.

Eleventh—If any differences arise between the operator and the miner, or between the operator and any of the employes of the mine, settlement shall be arrived at without stopping work. If the parties immediately affected cannot reach an agreement between themselves, the question shall be referred without delay to the local committee and the company's officials. If they fail to effect a settlement, it shall be referred to the officials of District No. 19, United Mine Workers of America, and the officials of the company. If they fail to adjust the grievances, it shall be referred to a Board of Arbitration, composed of one or two persons from each side, with power to select an umpire. Their decision shall be final and binding on all parties to this agreement and those they represent. Arbitrators shall be appointed within three days after the case is submitted to arbitration, and they shall proceed within five days to hear and determine the case. In the event of the arbitrators being unable to select an umpire within fifteen days after their appointment, Judge M. M. Allison is to select an umpire from three names submitted by each respective side.

The operator and his superintendent and mine manager shall be respected in the management of the mine and in direction of the working force. All day men shall perform whatever kind of day labor the management may direct them to perform from time to time. The right to hire includes the right to discharge, and it is not the purpose of this agreement to abridge the right of the employer in either of these respects. If, however, any employe shall be suspended or discharged by the company, and it is claimed that an injustice has been done him, an investigation shall be conducted as herein provided, and if it is determined that an injustice has been done, the operator agrees to reinstate said employes.

Witness our hands this the 7th day of October, 1907.

ALEX. UREN,  
T. M. GANN,  
W. E. BRUMIT, -  
PHIL LYNCH,  
HENRY BARNES,  
GEO. BRANAM, D. B. M.,  
T. J. DUNAWAY, President District No. 19,  
PAT CARY, Vice President District No. 19,  
T. J. SMITH, I. B. M., U. M. W. of A.

*Scale Committee.*

NEW SODDY COAL COMPANY,

Per W. H. WIGTON, *Engineer in Charge.*

## SALE CREEK COAL &amp; COKE CO., SALE CREEK, TENN.

This agreement made and entered into by and between the Sale Creek Coal and Coke Company, and its employees and the officials of the U. M. W. of A., for the ensuing year, expiring October 31, 1908:

First—That nine hours shall constitute a day's work. Starting time to be 7 a. m.; quitting and firing time, 4 p. m. Drivers must report at stable at 6:40 a. m.

Second—Two thousand (2,000) pounds shall constitute a ton. Prices for mining will be as follows, viz.:

Coal over 36 inches, 42c per ton.

Coal 24 to 36 inches, 45c per ton.

Under 24 inches, special prices.

Third—Yardage prices will be as follows: Entries, \$1.65 per lineal yard. Airways, 80c per lineal yard. Cut-throughs, 55c per lineal yard. Turning rooms 15 feet deep, \$2.50 each. Wet places to be paid 2c per ton in addition to the regular price for mining. Only such places shall be termed wet in which the water will run from the drill holes when bored horizontally, and in proper place, or when water stands at face so as to require bailing.

Fourth—Scale of wages:

Drivers .....	\$1.79	Rope rider .....	\$1.67
Head trackmen .....	1.83	Sheavemen .....	1.28
Track helper .....	1.45	Engineers .....	1.55
Head topman .....	1.83	Firemen .....	1.43
Assistant topman .....	1.58	Blacksmiths .....	2.15
Water hauler .....	1.45	Blacksmith's helper .....	1.45
Trappers .....	.62	Weighmen .....	1.85
Couplers .....	.77	Tipman .....	1.28
Timbermen .....	.83	Carpenters .....	1.58

Pick sharpening, 35c per month; 20c half month; 10c quarter month.

Fifth—House fuel: Clear lump coal at \$1.80 per ton, delivered.

Sixth—Dues and assessments to be collected from all employes through the office by the 5th of each month, or the first work done thereafter.

Seventh—In case of the death of an employe or a member of his family the following rule shall prevail: Death by accident, in or around the mine, the mine will be idle until after the funeral. Death of an employe or a member of his family from natural causes, the work shall not be idle, but any desiring to attend funeral may do so by notifying the foreman.

Eighth—Pay-day semi-monthly. Pay-day shall be the second Saturday of each month for the work done the last half of the month, and the last Saturday in each month for the work done in the first half of the month. In consideration of the semi-monthly pay, men are to work on first working day of each month, that an ordinary day's work may be done in keeping with other days. Men absenting themselves on the first and second working days of any month, or the first Monday or Tuesday after pay-day, will be discharged.

Ninth—No committee shall visit any employe at his place of work except accompanied by the mine foreman, and then only to settle a grievance. Any disputes arising from this contract between employer and employed that cannot be adjusted

with the committee and the engineer in charge must be referred to the engineer in charge and the district or national officers of the United Mine Workers of America, and under no circumstances is work to stop during the life of this contract unless the latter parties fail to agree. If, however, any employe shall be suspended or discharged by the company, and it is claimed an injustice has been done him, an investigation shall be conducted as herein provided, and if it is determined that an injustice has been done him, the operator agrees to reinstate said employe and pay him full compensation for the time he shall have been suspended and out of employment: Provided, no decision has been reached within five days, the case shall be considered closed, in so far as compensation is concerned, for the time he has been idle.

The compensation for the said five days for a laborer shall be at the rate of wages at which he was employed for the hours worked by the mine during the days of his suspension. If a miner, then the average rate of wages earned by him during the month preceding the one in which he was suspended.

Witness our hands this the 30th day of October, 1907.

NEWT. GENTRY,

JAS B. PUDDY,

J. H. SCYBERT,

GEO. BRANAM, District Board Member.

J. S. MCCracken, Secretary-Treasurer,

T. J. DUNAWAY, President District No. 19, U. M. W. of A.

For the Sale Creek Coal and Coke Co.:

W. H. WIGTON, *Engineer in Charge.*

## WOOLDRIDGE-JELICO COAL COMPANY, WOOLDRIDGE, TENN.

### MINING.

*Resolved*, That the price for mining shall be as follows:

That in the Jellico district pick-mined screen coal shall be paid for on the following basis:

No. 1. Under 2½ feet .....	\$1.01
No. 2. 2½ feet to 2 feet 9 inches .....	.94.3
No. 3. 2 feet 9 inches to 3½ feet .....	.87.5
No. 4. 3 feet 6 inches and over .....	.80.7
The above per ton of 2,000 pounds in weigh box.	
Run of mine shall be, per ton of 2,000 pounds.....	.56.44

### YARDAGE.

The standard price of entries, either tight or gob, in the Jellico district shall be \$2.30 per yard in slate, but when both top and bottom are blasted, the price shall be \$2.90 per yard; solid rock entries, \$3.25; rock top and slate bottom, \$3.70. Entries, airways, and all narrow work in coal, when used for entries and airways, shall be \$1.00 per yard. But when the slate parting occurs in the coal, and neither top nor bottom is blasted, the price shall be \$1.40 per yard, in entries and airways, when the slate is loaded out and does not exceed 9 inches in thickness; over 9 inches and up to 18 inches in entries and rooms, 4-5c extra per ton shall be paid on the coal.

### ROOM TURNING.

In high coal, \$2.45; in medium coal, \$2.75; in low coal, \$3.05; for double rooms in all coal, \$4.55.

## DAY LABOR.

There shall be a uniform day wage scale, as follows:

Classification.	Rate per hour.	Rate per day.
Inside driver, one mule .....	21.42c	\$1.93
Drivers, two mules .....	23.10c	2.08
Drivers, three mules .....	24.25c	2.17
Drivers, four mules .....	25.30c	2.27
Head track layer .....	30.18c	2.71
Assistant track layer .....	21.42c	1.93
Trappers .....	7.61c	.68
Timberman .....	27.29c	2.44
Timberman helper .....	21.42c	1.93
Inside pumper and water bailer.....	21.42c	1.93
Motormen .....	27.40c	2.47
Motormen couplers (gathering).....	23.31c	2.10
Motormen couplers (main haul).....	21.42c	1.93
Practical miners called to company work.....	27.40c	2.47
Machine runner .....	29.08c	2.63
Machine hostler (chain).....	26.25c	2.36
Machine hostler (punch).....	21.42c	1.93
Outside pumper and water bailer.....	20.05c	1.81
Muckers, or inside labor .....	20.05c	1.81
Coupler man, inside .....	18.90c	1.70
Coupler man, outside .....	15.04c	1.35
Coupler boy, inside .....	9.76c	.88
Coupler boy, outside .....	7.56c	.68
Tip house man .....	20.05c	1.81
Outside driver, 10c per day less than inside. Boy driver under 16 years of age, 35c per day less than regular prices.		
Drum man .....	22.59c	2.04
Knuckle man .....	20.05c	1.81
Knuckle boy .....	15.04c	1.35
Furnace man (digging his own coal).....	22.59c	2.04
Furnace man and watchman .....	16.38c	1.47
Outside labor, including slate dumpers.....	15.04c	1.35
Blacksmith .....	26.35c	2.36
Pick sharpener .....	22.59c	2.04

## IMPURITIES.

Any miner loading an unusual amount of dirt, slate, sulphur, or other impurities with his coal shall be laid off one day for each offense. The company's representatives will, on all such occasions, show such unusual amount. Any miner laid off for three days during any one month shall then be subject to discharge; provided, however, that no dirt, slate, sulphur, or other impurities shall be included in the measurements to determine the height of coal.

## TIMBERING.

*Resolved,* That present conditions continue at all mines.

## TRACKS.

*Resolved*, That in addition to the iron tracks now being used, the dip places where men have to push the cars shall be provided with iron rails.

## CARS.

*Resolved*, That all cars are to be handled the same as last year; but it is understood that this clause shall not be construed to have miners handle cars where it has been customary for the company to handle them heretofore.

Rents, house fuel, pick sharpening at each mine shall remain without change during the life of this contract.

## HOURS.

SECTION 1. Nine hours shall constitute a day's work for all classes of labor for which a scale of wages is made in this contract.

SEC. 2. A nine-hour day means nine hours' work in the mines at the usual working place for all classes of day labor and miners. This shall be exclusive of the time required in reaching the working place and departing from the same at night.

*Regarding Drivers*—They shall take their mules to and from the stable, and the time in so doing shall not include any part of the day's work.

It is distinctly understood that the time for starting each day depends on the arrival of railroad cars, providing the run begins in two hours from the regular starting time; pay to begin with work, and work to stop at the regular quitting time.

## PAY DAY.

Payment of wages shall be semi-monthly, the pay-day being on or before the last day of each month, for the work performed during the first half of the month, and on or before the 15th of the succeeding month, for work performed during the last half of the month; but it is understood that statements shall be made only once for each month; the semi-monthly pay being the last in each month to be paid in even dollars. An employe desiring to leave the employment of the company shall receive his money at once, or not later than five days after his notice is given.

## CUT.

All employes whose wages are regulated by this scale shall be cut for dues and assessments through the office out of the first five days' work performed in each month, the same to be paid to the proper person or persons authorized to receive the same, the dues and assessments not to exceed \$1.00 per month without the special written order of each employe. Initiation fees are hereby guaranteed to be uniform throughout District No. 19, and that the payment of same shall be prorated through sixty days, if necessary.

## TURN.

A square turn shall be kept all over the mine, in rooms and narrow work, under ordinary conditions. Miners absenting themselves from their working places for three consecutive days without first obtaining the consent of the superintendent, or bank boss, shall forfeit their working places, except in cases of sickness of themselves or any member of their family; and except also representatives of the organization engaged in work of the organization, in which case they must notify the superintendent,

or bank boss. Work shall not stop at any mine on any day other than on general holidays, and on April 1, without previous agreement with the management of such mine.

### SCOTT COUNTY COAL AND COKE COMPANY, HELENWOOD, TENN.

Mine run coal, strictly clean of all impurities:

Under 24 inches, per ton .....	84c
24 to 27 inches, per ton .....	78.75c
27 to 30 inches, per ton .....	73.50c
30 to 33 inches, per ton.....	68.25c
33 to 36 inches, per ton.....	63c
36 inches and over, per ton.....	57.75c
2c per ton over above prices when dirt band is over 10 inches.	
2,000 pounds to constitute a ton.	

When rooms are driven over 100 feet, 5c per ton extra, and over 160 feet, 7½c per ton extra.

#### ENTRIES.

Rock top and slate bottom, per yard .....	\$3.70
Rock (with hammer and steel), per yard.....	3.25
Stratified rock top, per yard.....	2.70
Slate, per yard.....	2.30
Airways, per yard .....	1.00
Room turning, per room .....	2.75
Brushing, per yard (per foot).....	.60

#### DAY LABOR.

There shall be a uniform day wage scale, as follows:

Classification.	Rate per hour.	Rate per day.
Inside driver, one mule .....	21.42c	\$1.93
Drivers, two mules .....	23.10c	2.08
Drivers, three mules .....	24.25c	2.17
Drivers, four mules.....	25.30c	2.27
Head track layer .....	30.18c	2.71
Assistant track layer .....	21.42c	1.93
Trappers .....	7.61c	.68
Timberman .....	27.29c	2.44
Timberman helper .....	21.42c	1.93
Inside pumper and water bailer .....	21.42c	1.93
Motormen .....	27.40c	2.47
Motormen couplers (gathering) .....	23.31c	2.10
Motormen couplers (main haul) .....	21.42c	1.93
Practical miners called to company work.....	27.40c	2.47
Machine runner .....	29.08c	2.63
Machine hostler (chain).....	26.25c	2.36
Machine hostler (punch) .....	21.42c	1.93
Outside pumper and water bailer.....	20.05c	1.81
Muckers, or inside labor .....	20.05c	1.81
Coupler man, inside .....	18.90c	1.70
Coupler man, outside .....	15.04c	1.35

	Rate per hour.	Rate per day.
Coupler boy, inside.....	9.76c	\$0.88
Coupler boy, outside .....	7.56c	.68
Tip house man .....	20.05c	1.81
Outside driver, 10c per day less than inside. Boy driver under 16 years of age, 35c per day less than regular prices.		
Drum man .....	22.59c	2.04
Knuckle man .....	20.05c	1.81
Knuckle boy .....	15.04c	1.35
Furnace man (digging his own coal).....	22.59c	2.04
Furnace man and watchman .....	16.38c	1.47
Outside labor, including slate dumpers.....	15.04c	1.35
Blacksmith .....	26.35c	2.36
Pick sharpener .....	22.59c	2.04

#### IMPURITIES.

Any miner loading an unusual amount of dirt, slate, sulphur, or other impurities with his coal shall be laid off one day for each offense. The company's representatives will, on all such occasions, show such unusual amount. Any miner laid off for three days during any one month shall then be subject to discharge, provided, however, that no dirt, slate, sulphur, or other impurities shall be included in the measurements to determine the height of coal.

#### TIMBERING.

*Resolved*, That present conditions continue at all mines.

#### TRACKS.

*Resolved*, That in addition to the iron tracks now being used, the dip places where men have to push the cars, shall be provided with iron rails.

#### CARS.

*Resolved*, That all cars are to be handled the same as last year, but it is understood that this clause shall not be construed to have miners handle cars where it has been customary for the company to handle them heretofore.

Rents, house fuel, pick sharpening at each mine shall remain without change during the life of this contract.

#### HOURS.

SECTION 1. Nine hours shall constitute a day's work, for all classes of labor for which a scale of wages is made in this contract.

SEC. 2. A nine-hour day means nine hours' work in the mines at the usual working place for all classes of day labor and miners. This shall be exclusive of the time required in reaching the working place and departing from the same at night.

*Regarding Drivers.*—They shall take their mules to and from the stable, and the time in so doing shall not include any part of the day's work.

It is distinctly understood that the time for starting each day depends on the arrival of railroad cars, providing the run begins in two hours from the regular starting time. Pay to begin with work, and work to stop at the regular quitting time.

#### PAY DAY.

Payment of wages shall be semi-monthly. The pay day being on or before the last day of each month, for the work performed during the first half of the month; and on or before the 15th of the succeeding month, for work performed during the

and on or before the 15th of the succeeding month, for work performed during the last half of the month; but it is understood that statements shall be made only once for each month. The semi-monthly pay being the last in each month to be paid in even dollars.

An employe desiring to leave the employment of the company shall receive his money at once, or not later than five days after his notice is given.

#### CUT.

All employes whose wages are regulated by this scale shall be cut for dues and assessments, through the office, out of the first five days' work performed in each month, the same to be paid to the proper person or persons authorized to receive the same. The dues and assessments not to exceed \$1.00 per month, without the special written order of each employe. Initiation fees are hereby guaranteed to be uniform throughout District No 19, and that the payment of same shall be prorated through sixty days if necessary.

#### TURN.

A square turn shall be kept all over the mine, in rooms and narrow work under ordinary conditions. Miners absenting themselves from their working places for three consecutive days without first obtaining the consent of the superintendent or bank boss, shall forfeit their working places, except in cases of sickness of themselves or any member of their family, and except also representatives of the organization engaged in work of the organization, in which case they must notify the superintendent or bank boss. Work shall not stop at any mine on any day other than on general holidays, and on April 1, without previous agreement with the management of such mine.

#### STANLEY COAL CO., ALMY, TENN.

All coal under 24 inches shall be 78.75c per ton for mining. All coal from 24 to 27 inches in thickness, 73.50c per ton. All coal from 27 to 30 inches in thickness, 68.25c per ton. All coal from 30 inches up in thickness, 63c per ton.

It is understood that the mining of coal under 22 inches shall not be required under this contract, and should it be desired to work any coal of that thickness at any time, it shall be made a matter of special agreement.

This contract shall apply to all mines which may be operated by the said first party, at or near Almy, Tenn., except No. 1 mines, which shall be paid as follows:

All coal under 30 inches in thickness shall be 78.75c per ton. All coal 30 inches and over shall be governed by above scale for coal at other mines, under this contract.

It is further agreed and understood that all coal mined under this contract shall be paid on run of mine basis.

The prices for day labor shall remain the same that were paid last year at these mines.

Narrow work, driving entries and airways, shall be paid for as follows:

All entries shall be \$2.55 per yard where the coal is over 24 inches. Under 24 inches, \$3.00 per yard, except wet entries. All airways shall be \$1.10 per yard, unless they are wet.

All entries and airways having wet holes that water will run out of, if bored horizontally, when drilled in proper place, necessitating the use of cartridges, or where water stands against the face, so as to require bailing, shall be determined wet, and 25c additional shall be paid per yard for same.

Room turning shall be as follows:

Coal under 30 inches shall be.....	\$3.05
Coal from 30 to 33 inches.....	2.75
Coal above 33 inches.....	2.45

All wet rooms and necks shall be paid 5 cents per ton extra on the coal.

All yardage for room brushing shall be 60 cents per yard, and shall, in all cases, be brushed 12 inches high. Where draw slate occurs the full width of the room or air course, the miner shall be paid 1 cent per ton extra on his coal for every inch in thickness, or slate he has to contend with average thickness, to 10 inches, except where the combined thickness of coal and draw slate reaches a height of three and one-half feet, in which case the miner shall be paid 60 cents per yard for brushing, the same as if actually done, to compensate him for handling the draw slate. In case of draw slate covering only a portion of the room or aircourse, the miner shall be paid in proportion to the space covered.

Any man having to lay away from his work for timbers, tracking, or anything caused by the company's neglect, for three or more consecutive days, shall be paid \$2.08 per day for his time.

When slate is taken from the mines by a night shift, the miner shall lay his own jumpers or short rails, but the mine foreman shall have material for laying such track at hand for use.

It is understood that the house rent and coal furnished employees shall remain the same as last year.

The same bank rules which governed this place last year shall be renewed, with any additional rules which may become necessary.

#### DAY LABOR.

There shall be a uniform day wage scale, as follows:

Classification.	Rate per hour.	Rate per day.
Inside driver, one mule .....	21.42c	\$1.93
Drivers, two mules .....	23.10c	2.08
Drivers, three mules .....	24.25c	2.17
Drivers, four mules.....	25.30c	2.27
Head track layer .....	30.18c	2.71
Assistant track layer .....	21.42c	1.93
Trappers .....	7.61c	.68
Timberman .....	27.29c	2.44
Timberman helper .....	21.42c	1.93
Inside pumper and water bailer .....	21.42c	1.93
Motormen .....	27.40c	2.47
Motormen couplers (gathering) .....	23.31c	2.10
Motormen couplers (main haul) .....	21.42c	1.93
Practical miners called to company work.....	27.40c	2.47
Machine runner .....	29.08c	2.63
Machine hostler (chain) .....	26.25c	2.36
Machine hostler (punch) .....	21.42c	1.93
Outside pumper and water bailer.....	20.05c	1.81
Muckers, or inside labor .....	20.05c	1.81
Coupler man, inside .....	18.90c	1.70
Coupler man, outside .....	15.04c	1.35
Coupler boy, inside .....	9.76c	.88

	Rate per hour.	Rate per day.
Coupler boy, outside .....	7.56c	.68
Tip house man .....	20.05c	1.81
Outside driver, 10c per day less than inside. Boy driver under 16 years of age, 35c per day less than regular prices.		
Drum man .....	22.59c	2.04
Knuckle man .....	20.05c	1.81
Knuckle boy .....	15.04c	1.35
Furnace man (digging his own coal).....	22.59c	2.04
Furnace man and watchman .....	16.38c	1.47
Outside labor, including slate dumpers.....	15.04c	1.35
Blacksmith .....	26.35c	2.36
Pick sharpener .....	22.59c	2.04

## TIMBERING.

*Resolved*, That present conditions continue at all mines.

## TRACKS.

*Resolved*, That in addition to the iron tracks now being used, the dip places where men have to push the cars shall be provided with iron rails.

## CARS.

*Resolved*, That all cars are to be handled the same as last year, but it is understood that this clause shall not be construed to have miners handle cars where it has been customary for the company to handle them heretofore.

Rents, house fuel, pick sharpening at each mine shall remain without change during the life of this contract.

## HOURS.

SECTION 1. Nine hours shall constitute a day's work for all classes of labor for which a scale of wages is made in this contract.

SEC. 2. A nine-hour day means nine hours' work in the mines at the usual working place for all classes of day labor and miners. This shall be exclusive of the time required in reaching the working place and departing from the same at night.

*Regarding Drivers.*—They shall take their mules to and from the stable, and the time in so doing shall not include any part of the day's work.

It is distinctly understood that the time for starting each day depends on the arrival of railroad cars, providing the run begins in two hours from the regular starting time. Pay to begin with work, and work to stop at the regular quitting time.

## PAY DAY.

Payment of wages shall be semi-monthly. The pay day being on or before the last day of each month, for the work performed during the first half of the month; and on or before the 15th of the succeeding month, for work performed during the last half of the month; but it is understood that statements shall be made only once for each month. The semi-monthly pay being the last in each month to be paid in even dollars.

An employee desiring to leave the employment of the company shall receive his money at once, or not later than five days after his notice is given.

## CUT.

All employes whose wages are regulated by this scale shall be cut for dues and assessments, through the office, out of the first five days' work performed in each month, the same to be paid to the proper person or persons authorized to receive the same. The dues and assessments not to exceed \$1.00 per month, without the special written order of each employe. Initiation fees are hereby guaranteed to be uniform throughout District No. 19, and that the payment of same shall be prorated through sixty days if necessary.

## TURN.

A square turn shall be kept all over the mine, in rooms and narrow work under ordinary conditions. Miners absenting themselves from their working places for three consecutive days without first obtaining the consent of the superintendent or bank boss, shall forfeit their working places, except in cases of sickness of themselves or any member of their family, and except also representatives of the organization engaged in work of the organization, in which case they must notify the superintendent or bank boss. Work shall not stop at any mine on any day other than on general holidays, and on April 1, without previous agreement with the management of such mine.

## PAINT ROCK COAL MINING CO., ALMY, TENN.

All coal under 24 inches shall be 78.75c per ton for mining. All coal from 24 to 27 inches in thickness, 73.50c per ton. All coal from 27 to 30 inches in thickness, 68.25c per ton. All coal from 30 inches up in thickness, 63c per ton.

It is understood that the mining of coal under 22 inches shall not be required under this contract, and should it be desired to work any coal of that thickness at any time, it shall be made a matter of special agreement.

This contract shall apply to all mines which may be operated by the said first party, at or near Almy, Tenn., except No. 1 mines, which shall be paid as follows:

All coal under 30 inches in thickness shall be 78.75c per ton. All coal 30 inches and over shall be governed by above scale for coal at other mines, under this contract.

It is further agreed and understood that all coal mined under this contract shall be paid on run of mine basis.

The prices for day labor shall remain the same that were paid last year at these mines.

Narrow work, driving entries and airways, shall be paid for as follows:

All entries shall be \$2.55 per yard where the coal is over 24 inches. Under 24 inches, \$3.00 per yard, except wet entries. All airways shall be \$1.10 per yard, unless they are wet.

All entries and airways having wet holes that water will run out of, if bored horizontally, when drilled in proper place, necessitating the use of cartridges, or where water stands against the face, so as to require bailing, shall be determined wet, and 25c additional shall be paid per yard for same.

Room turning shall be as follows:

Coal under 30 inches shall be.....	\$3.05
Coal from 30 to 33 inches.....	2.75
Coal above 33 inches.....	2.45

All wet rooms and necks shall be paid 5 cents per ton extra on the coal.

All yardage for room brushing shall be 60 cents per yard, and shall, in all cases, be brushed 12 inches high. Where draw slate occurs the full width of the room or air course, the miner shall be paid 1 cent per ton extra on his coal for every inch in thickness, or slate he has to contend with average thickness, to 10 inches, except where the combined thickness of coal and draw slate reaches a height of three and one-half feet, in which case the miner shall be paid 60 cents per yard for brushing, the same as if actually done, to compensate him for handling the draw slate. In case of draw slate covering only a portion of the room or aircourse, the miner shall be paid in proportion to the space covered.

Any man having to lay away from his work for timbers, tracking, or anything caused by the company's neglect, for three or more consecutive days, shall be paid \$2.08 per day for his time.

When slate is taken from the mines by a night shift, the miner shall lay his own jumpers or short rails, but the mine foreman shall have material for laying such track at hand for use.

It is understood that the house rent and coal furnished employes shall remain the same as last year.

The same bank rules which governed this place last year shall be renewed, with any additional rules which may become necessary.

#### DAY LABOR.

There shall be a uniform day wage scale, as follows:

Classification.	Rate per hour.	Rate per day.
Inside driver, one mule .....	21.42c	\$1.93
Drivers, two mules .....	23.10c	2.08
Drivers, three mules .....	24.25c	2.17
Drivers, four mules .....	25.30c	2.27
Head track layer .....	30.18c	2.71
Assistant track layer .....	21.42c	1.93
Trappers .....	7.61c	.68
Timberman .....	27.29c	2.44
Timberman helper .....	21.42c	1.93
Inside pumper and water bailer .....	21.42c	1.93
Motormen .....	27.40c	2.47
Motormen couplers (gathering) .....	23.31c	2.10
Motormen couplers (main haul) .....	21.42c	1.93
Practical miners called to company work .....	27.40c	2.47
Machine runner .....	29.08c	2.63
Machine hostler (chain) .....	26.25c	2.36
Machine hostler (punch) .....	21.42c	1.93
Outside pumper and water bailer .....	20.05c	1.81
Muckers, or inside labor .....	20.05c	1.81
Coupler man, inside .....	18.90c	1.70
Coupler man, outside .....	15.04c	1.35
Coupler boy, inside .....	9.76c	.88
Coupler boy, outside .....	7.56c	.68
Tip house man .....	20.05c	1.81
Outside driver, 10c per day less than inside. Boy driver under 16 years of age, 35c per day less than regular prices.		
Drum man .....	22.59c	2.04

	Rate per hour.	Rate per day.
Knuckle man .....	20.05c	1.81
Knuckle boy .....	15.04c	1.35
Furnace man (digging his own coal).....	22.59c	2.04
Furnace man and watchman .....	16.38c	1.47
Outside labor, including slate dumpers.....	15.04c	1.35
Blacksmith .....	26.35c	2.36
Pick sharpener .....	22.59c	2.04

## TIMBERING.

*Resolved*, That present conditions continue at all mines.

## TRACKS.

*Resolved*, That in addition to the iron tracks now being used, the dip places where men have to push the cars shall be provided with iron rails.

## CARS.

*Resolved*, That all cars are to be handled the same as last year, but it is understood that this clause shall not be construed to have miners handle cars where it has been customary for the company to handle them heretofore.

Rents, house fuel, pick sharpening at each mine shall remain without change during the life of this contract.

## HOURS.

SECTION 1. Nine hours shall constitute a day's work for all classes of labor for which a scale of wages is made in this contract.

SEC. 2. A nine-hour day means nine hours' work in the mines at the usual working place for all classes of day labor and miners. This shall be exclusive of the time required in reaching the working place and departing from the same at night.

*Regarding Drivers.*—They shall take their mules to and from the stable, and the time in so doing shall not include any part of the day's work.

It is distinctly understood that the time for starting each day depends on the arrival of railroad cars, providing the run begins in two hours from the regular starting time. Pay to begin with work, and work to stop at the regular quitting time.

## PAY DAY.

Payment of wages shall be semi-monthly. The pay day being on or before the last day of each month, for the work performed during the first half of the month; and on or before the 15th of the succeeding month, for work performed during the last half of the month; but it is understood that statements shall be made only once for each month. The semi-monthly pay being the last in each month to be paid in even dollars.

An employe desiring to leave the employment of the company shall receive his money at once, or not later than five days after his notice is given.

## CUT.

All employes whose wages are regulated by this scale shall be cut for dues and assessments, through the office, out of the first five days' work performed in each month, the same to be paid to the proper person or persons authorized to receive the same. The dues and assessments not to exceed \$1.00 per month, without the special written order of each employe. Initiation fees are hereby guaranteed to be uniform throughout District No. 19, and that the payment of same shall be pro-rated through sixty days if necessary.

## TURN.

A square turn shall be kept all over the mine, in rooms and narrow work under ordinary conditions. Miners absenting themselves from their working places for three consecutive days without first obtaining the consent of the superintendent or bank boss, shall forfeit their working places, except in cases of sickness of themselves or any member of their family, and except also representatives of the organization engaged in work of the organization, in which case they must notify the superintendent or bank boss. Work shall not stop at any mine on any day other than on general holidays, and on April 1, without previous agreement with the management of such mine.

## JELICO BLUE GEM COAL CO., JELICO, TENN.

## MINING.

*Resolved*, That the price for mining shall be as follows:

That in the Jellico District, pick mined screened coal shall be paid for on the following basis:

No. 1. Under 2½ ft.....	\$1 01
No. 2. 2½ ft. to 2 ft. 9 in.....	94.3c
No. 3. 2 ft. 9 in. to 3½ ft.....	87.5c
No. 4. 3 ft. 6 in. and over.....	80.7c
The above per ton of 2,000 lbs. in weigh box.	
Run of mine shall be, per ton of 2,000 lbs.....	56.44c

## YARDAGE.

The standard price of entries, either tight or gob, in the Jellico District shall be \$2.30 per yard in slate, but when both top and bottom are blasted, the price shall be \$2.90 per yard; solid rock entries, \$3.25; rock top and slate bottom, \$3.70. Entries, airways and all narrow work in coal, when used for entries and airways, shall be \$1.00 per yard. But when the slate parting occurs in the coal, and neither top nor bottom is blasted, the price shall be \$1.40 per yard in entries and airways when the slate is loaded out and does not exceed 9 inches in thickness; over 9 inches, and up to 18 inches, in entries and rooms, 44-5c extra per ton shall be paid on the coal.

## ROOM TURNING.

In high coal, \$2.45; in medium coal, \$2.75; in low coal, \$3.05; for double rooms in all coal, \$4.55.

## DAY LABOR.

There shall be a uniform day wage scale, as follows:

Classification.	Rate per hour.	Rate per day.
Inside driver, one mule .....	21.42c	\$1.93
Drivers, two mules .....	23.10c	2.08
Drivers, three mules .....	24.25c	2.17
Drivers, four mules.....	25.30c	2.27
Head track layer .....	30.18c	2.71
Assistant track layer .....	21.42c	1.93
Trappers .....	7.61c	.68
Timberman .....	27.29c	2.44
Timberman helper .....	21.42c	1.93

	Rate per hour.	Rate per day.
Inside pumper and water bailer.....	21.42c	\$1.93
Motormen .....	27.40c	2.47
Motormen couplers (gathering) .....	23.31c	2.10
Motormen couplers (main haul) .....	21.42c	1.93
Practical miners called to company work.....	27.40c	2.47
Machine runner .....	29.08c	2.63
Machine hostler (chain) .....	26.25c	2.36
Machine hostler (punch) .....	21.42c	1.93
Outside pumper and water bailer.....	20.05c	1.81
Muckers, or inside labor .....	20.05c	1.81
Coupler man, inside .....	18.90c	1.70
Coupler man, outside .....	15.04c	1.35
Coupler boy, inside .....	9.76c	.88
Coupler boy, outside .....	7.56c	.68
Tip house man .....	20.05c	1.81
Outside driver, 10c per day less than inside. Boy driver under 16 years of age, 35c per day less than regular prices.		
Drum man .....	22.59c	2.04
Knuckle man .....	20.05c	1.81
Knuckle boy .....	15.04c	1.35
Furnace man (digging his own coal).....	22.59c	2.04
Furnace man and watchman .....	16.38c	1.47
Outside labor, including slate dumpers.....	15.04c	1.35
Blacksmith .....	26.35c	2.36
Pick sharpener .....	22.59c	2.04

#### IMPURITIES.

Any miner loading an unusual amount of dirt, slate, sulphur, or other impurities with his coal shall be laid off one day for each offense. The company's representatives will, on all such occasions, show such unusual amount. Any miner laid off for three days during any one month shall then be subject to discharge, provided, however, that no dirt, slate, sulphur, or other impurities shall be included in the measurements to determine the height of coal.

#### TIMBERING.

*Resolved,* That present conditions continue at all mines.

#### TRACKS.

*Resolved,* That in addition to the iron tracks now being used, the dip places where men have to push the cars shall be provided with iron rails.

#### CARS.

*Resolved,* That all cars are to be handled the same as last year, but it is understood that this clause shall not be construed to have miners handle cars where it has been customary for the company to handle them heretofore.

Rents, house fuel, pick sharpening at each mine shall remain without change during the life of this contract.

#### HOURS.

SECTION I. Nine hours shall constitute a day's work for all classes of labor for which a scale of wages is made in this contract.

SEC. 2. A nine-hour day means nine hours' work in the mines at the usual working place for all classes of day labor and miners. This shall be exclusive of the time required in reaching the working place and departing from the same at night.

*Regarding Drivers.*—They shall take their mules to and from the stable, and the time in so doing shall not include any part of the day's work.

It is distinctly understood that the time for starting each day depends on the arrival of railroad cars, providing the run begins in two hours from the regular starting time. Pay to begin with work, and work to stop at the regular quitting time.

#### PAY DAY.

Payment of wages shall be semi-monthly. The pay day being on or before the last day of each month, for the work performed during the first half of the month; and on or before the 15th of the succeeding month, for work performed during the last half of the month; but it is understood that statements shall be made only once for each month. The semi-monthly pay being the last in each month to be paid in even dollars.

An employe desiring to leave the employment of the company, shall receive his money at once, or not later than five days after his notice is given.

#### CUT.

All employes whose wages are regulated by this scale shall be cut for dues and assessments, through the office, out of the first five days' work performed in each month, the same to be paid to the proper person or persons authorized to receive the same. The dues and assessments not to exceed \$1.00 per month, without the special written order of each employe. Initiation fees are hereby guaranteed to be uniform throughout District No. 19, and that the payment of same shall be prorated through sixty days if necessary.

#### TURN.

A square turn shall be kept all over the mine, in rooms and narrow work under ordinary conditions. Miners absenting themselves from their working places for three consecutive days without first obtaining the consent of the superintendent or bank boss, shall forfeit their working places, except in cases of sickness of themselves or any member of their family, and except also representatives of the organization engaged in work of the organization, in which case they must notify the superintendent or bank boss. Work shall not stop at any mine on any day other than on general holidays, and on April 1, without previous agreement with the management of such mine.

### FALLS BRANCH COAL CO., OSWEGO, TENN.

#### MINING.

*Resolved,* That the price for mining shall be as follows:

That in the Jellico District, pick mined screened coal shall be paid for on the following basis:

No. 1. under 2½ ft. ....	\$1 01
No. 2. 2½ ft. to 2 ft. 9 in. ....	94.3c
No. 3. 2 ft. 9 in. to 3½ ft. ....	87.5c
No. 4. 3 ft. 6 in. and over. ....	80.7c
The above per ton of 2,000 lbs. in weigh box.	
Run of mine shall be, per ton of 2,000 lbs. ....	56.44c

## YARDAGE.

The standard price of entries, either tight or gob, in the Jellico District shall be \$2.30 per yard in slate, but when both top and bottom are blasted, the price shall be \$2.90 per yard; solid rock entries, \$3.25; rock top and slate bottom, \$3.70. Entries, airways and all narrow work in coal, when used for entries and airways, shall be \$1.00 per yard. But when the slate parting occurs in the coal, and neither top nor bottom is blasted, the price shall be \$1.40 per yard in entries and airways when the slate is loaded out and does not exceed 9 inches in thickness; over 9 inches, and up to 18 inches, in entries and rooms, 4-5c extra per ton shall be paid on the coal.

## ROOM TURNING.

In high coal, \$2.45; in medium coal, \$2.75; in low coal, \$3.05; for double rooms in all coal, \$4.55.

## DAY LABOR.

There shall be a uniform day wage scale, as follows:

Classification.	Rate per hour.	Rate per day.
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Muckers, or inside labor .....	20.05c	1.81
Coupler man, inside .....	18.90c	1.70
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Outside driver, 10c per day less than inside. Boy driver under 16 years of age, 35c per day less than regular prices.		
Drum man .....	22.59c	2.04
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Knuckle boy .....	15.04c	1.35
Furnace man (digging his own coal).....	22.59c	2.04
Furnace man and watchman .....	16.38c	1.47
Outside labor, including slate dumpers.....	15.04c	1.35
Blacksmith .....	26.35c	2.36
Pick sharpener .....	22.59c	2.04

## IMPURITIES.

Any miner loading an unusual amount of dirt, slate, sulphur, or other impurities with his coal shall be laid off one day for each offense. The company's representatives will, on all such occasions, show such unusual amount. Any miner laid off for three days during any one month shall then be subject to discharge, provided, however, that no dirt, slate, sulphur, or other impurities shall be included in the measurements to determine the height of coal.

## TIMBERING.

*Resolved*, That present conditions continue at all mines.

## TRACKS.

*Resolved*, That in addition to the iron tracks now being used, the dip places where men have to push the cars shall be provided with iron rails.

## CARS.

*Resolved*, That all cars are to be handled the same as last year, but it is understood that this clause shall not be construed to have miners handle cars where it has been customary for the company to handle them heretofore.

Rents, house fuel, pick sharpening at each mine shall remain without change during the life of this contract.

## HOURS.

SECTION 1. Nine hours shall constitute a day's work for all classes of labor for which a scale of wages is made in this contract.

SEC 2. A nine-hour day means nine hours' work in the mines at the usual working place for all classes of day labor and miners. This shall be exclusive of the time required in reaching the working place and departing from the same at night.

*Regarding Drivers*.—They shall take their mules to and from the stable, and the time in so doing shall not include any part of the day's work.

It is distinctly understood that the time for starting each day depends on the arrival of railroad cars, providing the run begins in two hours from the regular starting time. Pay to begin with work, and work to stop at the regular quitting time.

## PAY DAY.

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An employe desiring to leave the employment of the company shall receive his money at once, or not later than five days after his notice is given.

## CUT.

All employes whose wages are regulated by this scale shall be cut for dues and assessments, through the office, out of the first five days' work performed in each month, the same to be paid to the proper person or persons authorized to receive the same. The dues and assessments not to exceed \$1.00 per month, without the special written order of each employe. Initiation fees are hereby guaranteed to be uniform throughout District No. 19, and that the payment of same shall be prorated through sixty days if necessary.

**TURN.**

A square turn shall be kept all over the mine, in rooms and narrow work under ordinary conditions. Miners absenting themselves from their working places for three consecutive days without first obtaining the consent of the superintendent or bank boss, shall forfeit their working places, except in cases of sickness of themselves or any member of their family, and except also representatives of the organization engaged in work of the organization, in which case they must notify the superintendent or bank boss. Work shall not stop at any mine on any day other than on general holidays, and on April 1, without previous agreement with the management of such mine.

## COKE

Coke statistics, as presented in this chapter, only embraces that product obtained from the distillation or partial combustion of bituminous coal in ovens.

In Tennessee the beehive oven is used exclusively, the name being derived from the shape or design of the combustion chamber, which is similar to that of the conventional beehive.

There are seventeen coking establishments now in Tennessee, and for 1907 twelve were reported active.

The total number of ovens existing at the close of 1907 was 2,819, as against 2,717 at the close of business for 1906.

Of the total number of ovens in existence during 1907 there were 953 idle during the entire year, leaving 1,866 active ovens, which produced 453,729 short tons of coke or an average of 243 short tons per oven.

The coke producing counties for 1907 were Campbell, Cumberland, Grundy, Hamilton, Marion, Morgan, Rhea, Roane, Sequatchie and White, a total of ten.

## PRODUCTION.

The total output in Tennessee for 1907 amounted to 453,729 short tons, valued at \$1,408,303, or \$3.10 per ton.

As compared with 1906 this is a decrease in product of 30,943 short tons, or 6.4 per cent, and an increase in values of \$57,674, or 4.27 per cent.

Rhea County still maintains the lead, with Roane County second and Campbell third.

## CONDITION IN WHICH COAL IS CHARGED IN THE OVENS.

Of the 896,411 short tons of coal used in the manufacture of coke, all but 54,370 short tons, or 6.06 per cent. was washed before being charged into the ovens. Of the 93.94 per cent. of coal washed before being charged into the coke ovens 53.47 per cent. was washed run of mines, and 40.47 washed slack.

When the coal is crushed and washed before being charged into the ovens the coking process is greatly facilitated and a much better quality of coke is obtained.

Of the coal coked 450,267 short tons, or 50.23 per cent. was run of mines and 446,144 short tons, or 49.77 per cent. was slack.

## DISPOSITION OF PRODUCT, AND VALUES.

Of the total coke product 208,995 short tons were used by the producing companies in the manufacture of pig iron at a valuation of \$683,895, or \$3.27 per ton; 244,077 short tons were sold at a valuation of \$723,067, or \$2.96 per ton.

The State produced 52,496 short tons at Brushy Mountain mines, which sold for \$131,733, or \$2.51 per ton. Eliminating the State's operations the coke sold amounted to 191,581 short tons, which brought \$591,334, or \$3.08 per ton.

The values for Rhea, Roane and Sequatchie counties are based upon the reported cost of production, except those for the Fox Coal Company, which, like the values for Campbell, Cumberland, Grundy, Hamilton, Marion, Morgan and White, are based upon the reported commercial rate received per ton.

It will be observed that while the commercial rate per ton for the entire State is \$3.08, the State only obtained \$2.51 per ton.

### QUANTITY AND VALUE OF COAL USED IN COKE MANUFACTURE.

Total coal used in coke manufacture (short tons).....	a 794,164
Total value of coal used in coke manufacture.....	a\$916,880
Value per ton of coal used in coke manufacture.....	a\$ 1.154
Quantity of coal used per ton of coke product (short tons).....	a 1.980
Value of coal to a ton of coke.....	a 2.285

These figures do not embrace the State operations at Brushy Mountain in Morgan County.

### COST OF COKE PRODUCT.

Excluding the State operations at Brushy Mountain, which constitutes the figures for Morgan County, the cost of coke product for 1907 is as follows:

Cost of coal coked .....	\$ 916,880, or 76.50 per cent. of total cost.
Cost of labor .....	197,497, or 16.50 per cent. of total cost.
Other or miscellaneous coke expenses .....	84,153, or 7.00 per cent. of total cost.

Total cost of coke .....\$1,198,530

Calculating the cost on a tonnage basis the cost of coke per ton is as follows: Coal, \$2.28; labor, \$0.49, and other expenses, \$0.21, making total cost of coke per ton of \$2.98.

The reported cost per ton of coke at the State operations at Brushy Mountain is as follows: For coal, .766, for labor and other miscellaneous expenses, .41, making a total of \$1.17 per ton.

### COKE ANALYSES.

All coke producers were requested in the blank schedule to give latest analysis of 48-hour coke manufactured by them. Those complying with this request were as follows:

NAME OF WORKS	ANALYSIS				
	Moisture	Vol. Matter	Fixed Carbon	Ash	Sulphur
Coalmont .....	0.39	0.39	85.78	13.44	0.67
Soddy .....	....	0.74	82.64	13.00	0.76
Brushy Mountain .....	....	0.194	87.90	10.16	1.55
Nelson (Dayton) .....	1.30	....	83.06	14.70	0.63
Richland (Dayton) .....	1.10	....	82.01	16.07	0.52
Fox .....	0.25	1.48	78.14	20.13	0.72
Southern .....	4.55	....	79.95	15.35	1.00
Eastland .....	0.32	1.06	82.10	14.16	2.36

The following series of tables in reference to coke manufacture in Tennessee for 1907 will be found interesting:

The first gives name and postoffice of all coke works in Tennessee, and name and postoffice of all coke manufacturers.

The second gives the number of coking establishments, pattern of ovens, total ovens built, total number now building and total number in operation during the year, value of plant and machinery and total value of coke works.

The third gives number of coke employees, average wages paid per day, number of days active, total amount paid for labor, character of coal coked, showing the condition in which coal is charged into the ovens.

The fourth gives quantity of coal coked, yield of coal in coke (per cent.) and quantity and value of coke produced.

The fifth gives total value and value per ton of coal coked, quantity of coal per ton of coke and total value of coal per ton of coke.

The sixth gives consolidated statistics of coke manufacture in Tennessee in 1880, 1890, and from 1900 to 1907, inclusive.

The seventh gives consolidated statistics of coke manufacture in the United States in 1880, 1890 and from 1900 to 1906, inclusive.

This statement shows operators of coke plants, arranged alphabetically by counties, also name of coke works in Tennessee for 1907.

Table No. 1—Coke Plant Operators and Coke Works in Tennessee, 1907.

OPERATORS			COKE WORKS	
No.	COUNTY AND NAME	POSTOFFICE	COUNTY AND NAME	POSTOFFICE
1	<i>Campbell County.</i> LaFollette Coal, I. & R. R. Co.	LaFollette .....	<i>Campbell County.</i> LaFollette .....	LaFollette.
2	<i>Claiborne County.</i> Mingo Coal & Coke Co.....	Middlesboro, Ky.	<i>Claiborne County.</i> aMingo .....	Hartranft.
3	<i>Cumberland County.</i> Waldensia Coal & Coke Co.....	Waldensia .....	<i>Cumberland County.</i> Waldensia .....	Waldensia.
4	<i>Grundy County.</i> Tenn. Con. Coal Co.....	Tracy City.....	<i>Grundy County.</i> aBryant Ridge...	Tracy City.
5	<i>Hamilton County.</i> Sewanee Coal, C. & L. Co.....	Coalmont .....	<i>Hamilton County.</i> Coalmont .....	Coalmont.
6	<i>Marion County.</i> New Soddy Coal Co.....	Chattanooga ....	<i>Marion County.</i> Soddy .....	Soddy.
7	<i>Marion County.</i> New Etna Coal Co.....	Chattanooga ....	<i>Marion County.</i> aEtna .....	Whitesides.
8	<i>Morgan County.</i> Tenn. Coal, I. & R. R. Co.....	Birmingham, Ala.	<i>Morgan County.</i> aVictoria .....	Victoria.
9	<i>Morgan County.</i> Tenn. Coal, I. & R. R. Co.....	Birmingham, Ala.	<i>Morgan County.</i> Whitwell .....	Whitwell.
10	<i>Rhea County.</i> State of Tennessee.....	Nashville .....	<i>Rhea County.</i> Brushy Mountain	Petros.
11	<i>Roane County.</i> Dayton Coal & Iron Co.....	Dayton .....	<i>Roane County.</i> Nelson .....	Dayton.
12	<i>Roane County.</i> Dayton Coal & Iron Co.....	Dayton .....	<i>Roane County.</i> Richland .....	Dayton.
13	<i>Roane County.</i> Fox Coal Co.....	Graysville .....	<i>Roane County.</i> Fox .....	Graysville.
14	<i>Scott County.</i> Roane Iron Co.....	Rockwood .....	<i>Scott County.</i> Roane Iron.....	Rockwood.
15	<i>Sequatchie County.</i> Glen Mary Coal & Coke Co.....	Glen Mary.....	<i>Sequatchie County.</i> aGlen Mary.....	Glen Mary.
16	<i>White County.</i> Southern Steel Co.....	Birmingham, Ala.	<i>White County.</i> Southern .....	Dunlap.
17	<i>White County.</i> Bon Air Coal & Iron Co.....	Nashville .....	<i>White County.</i> Eastland .....	Eastland.

a—Not active.

This statement shows number of coking establishments, number and character of coke ovens now built, number of ovens in process of building, number of ovens in blast during the year, and value of coke works in Tennessee for 1907.

Table No. 2—Coke Ovens and Coke Works in Tennessee for 1907.

COUNTY	Number of Establishments	OVENS			VALUE OF WORKS		
		Built	Building	In Operation During Year	Plant	Machinery and improvements	Total
Campbell .....	1	293	.....	293	\$164,150	\$ 39,407	\$203,557
Claiborne .....	1	173	.....	.....	33,850	18,750	52,600
Cumberland .....	1	60	.....	60	15,000	10,000	25,000
Grundy .....	2	380	.....	60	110,000	10,000	120,000
Hamilton .....	1	196	.....	186	41,535	13,465	55,000
Marion .....	3	320	.....	150	71,400	7,000	78,400
Morgan .....	1	140	.....	139	35,000	10,000	45,000
Rhea .....	3	449	.....	442	95,270	28,000	123,270
Roane .....	1	370	.....	250	50,000	10,000	60,000
Scott .....	1	70	.....	.....	6,000	1,500	7,500
Sequatchie .....	1	168	.....	86	80,000	20,000	100,000
White .....	1	200	.....	200	30,000	10,000	40,000
Total .....	17	2,819	.....	1,866	\$732,205	\$178,122	\$910,327

Note—All ovens are of the beehive type.

This statement shows number of employees, average wages paid per day, total wages paid, average number of days reported active and character and quantity of coal coked by coke works in Tennessee during 1907.

Table No. 3.—Employees and Wages and Character and Quantity of Coal Coked by Coke Works in Tennessee, 1907.

COUNTY	EMPLOYES				CHARACTER OF COAL COKED (Short Tons)				
	Total Number of	Av. Wages Paid Per Day	Total Number Days Active	Total Am't Paid for Labor	Run of Mine		Slack		Total
					Un-washed	Washed	Un-washed	Washed	
Campbell ....	38	.....	365	.....	.....	100,509	.....	22,038	122,547
Claiborne ....	.....	.....	.....	.....	.....	7,360	.....	.....	7,360
Cumberland ..	12	.....	95	.....	.....	.....	.....	28,276	28,276
Grundy .....	14	.....	267	.....	.....	.....	.....	82,523	82,523
Hamilton .....	68	.....	212	.....	.....	.....	54,370	.....	54,370
Marion .....	35	.....	225	.....	.....	.....	.....	102,247	102,247
Morgan .....	57	.....	310	.....	.....	193,803	.....	38,470	232,273
Rhea .....	168	.....	290	.....	.....	148,595	.....	.....	148,595
Roane .....	70	.....	300	.....	.....	.....	.....	79,491	79,491
Scott .....	.....	.....	.....	.....	.....	.....	.....	38,729	38,729
Sequatchie ...	32	.....	279	.....	.....	.....	.....	.....	.....
White .....	45	.....	190	.....	.....	.....	.....	.....	.....
Total .....	539	\$1.53	268	\$197,497	.....	450,267	54,370	391,774	896,411

This statement shows quantity of coal used in the manufacture of coke, yield of coal in coke (per cent), quantity and value of coke produced at coke works in Tennessee for 1907.

Table No. 4.—*Coal Coked, Yield of Coal in Coke, and Quantity and Value of Coke Produced in Tennessee for 1907.*

COUNTY	Coal Used (Short Tons)	Yield of Coal in Coke (Per Cent)	COKE PRODUCED		
			Quantity (Short Tons)	Value	Value Per Ton
Campbell .....	122,547	47.00	57,694	\$ 160,951	\$2.79
Claiborne .....					
Cumberland .....	7,360	45.00	3,312	12,298	3.72
Grundy .....	28,276	59.05	16,699	60,794	3.64
Hamilton .....	82,523	53.15	43,863	159,724	3.71
Marion .....	54,370	57.71	31,429	78,572	2.50
Morgan .....	102,247	51.34	52,496	131,733	2.51
Rhea .....	232,273	49.41	114,765	330,140	2.87
Roane .....	148,595	50.00	74,291	268,493	3.88
Scott .....					
Sequatchie .....	79,491	50.00	39,745	149,043	3.75
White .....	38,729	50.70	19,435	56,555	2.91
Total .....	896,411	50.61	453,729	\$1,408,303	\$3.10

This statement shows quantity and value of coal used in the manufacture of coke, and quantity and value of coal per ton of coke, at Tennessee coke works for 1907.

Table No. 5.—*Quantity and Value of Coal Used and Quantity and Value of Coal per Ton of Coke, 1907.*

COUNTY	Coal Used (Short Tons)	Total Value of Coal	Value of Coal Per Ton	Quantity of Coal Per Ton of Coke (Short Tons)	Value of Coal to a Ton of Coke
Campbell .....	122,547	\$ 93,602	\$0.764	2.125	\$1.623
Claiborne .....					
Cumberland .....	7,360	9,200	1.25	2.222	2.777
Grundy .....	28,276	29,934	1.058	1.693	1.791
Hamilton .....	82,523	121,169	1.47	1.88	2.763
Marion .....	54,370	67,962	1.25	1.73	2.16
Morgan .....	102,247	40,231	0.393	1.948	0.765
Rhea .....	232,273	232,471	1.010	2.024	2.044
Roane .....	148,595	221,968	1.493	2.00	2.986
Scott .....					
Sequatchie .....	79,491	119,236	1.50	2.00	3.00
White .....	38,729	21,338	0.551	2.00	1.102
Total .....	896,411	\$ 957,111	\$1.067	1.975	\$ 2.107

This statement shows the production and other coke statistics in Tennessee for the years 1880, 1890, 1900, and from 1901 to 1907, inclusive.

Table No. 6.—*Consolidated Statistics of Coke Manufacture in Tennessee from 1880-1907, Inclusive.*

YEAR	Establishments	OVENS		Coal Used (S. Tons)	COKE PRODUCED			Yield of Coal in Coke (per cent.)
		Built	Building		Quantity (S. Tons)	Total Value of Coke at Ovens	Value per Ton	
1880 .....	6	656	68	217,656	130,609	\$ 316,607	\$2.42	60.00
1890 .....	11	1,664	292	600,387	348,728	684,116	1.96	58.00
1900 .....	13	1,923	50	946,597	494,438	1,186,655	2.40	52.20
1901 .....	13	1,914	190	741,267	393,197	892,351	2.27	53.00
1902 .....	14	2,227	360	988,989	555,188	1,709,745	3.06	56.14
1903 .....	15	2,421	260	1,013,531	547,109	1,693,292	3.09	53.98
1904 .....	16	2,390	200	731,867	386,875	923,120	2.38	52.86
1905 .....	16	2,604	.....	871,590	468,799	1,184,555	2.52	53.78
1906 .....	17	2,714	78	931,641	484,672	1,350,629	2.79	52.02
1907 .....	17	2,819	.....	896,411	453,729	1,408,303	3.10	50.61

This statement shows the production and other coke statistics in the United States for the years 1880, 1890, 1900, and from 1901 to 1906, inclusive.

Table No. 7.—*Consolidated Statistics of Coke Manufactured in the United States from 1880-1906, Inclusive.*

YEAR	Establishments	OVENS		Coal Used (S. Tons)	COKE PRODUCED			Yield of Coal in Coke (per cent.)
		Built	Building		Quantity (S. Tons)	Total Value of Coke at Ovens	Value per Ton	
1880 .....	186	12,372	1,159	5,237,741	3,338,300	\$ 6,631,267	\$1.99	63.00
1890 .....	253	37,158	1,547	18,005,209	11,508,021	23,215,302	2.02	64.00
1900 .....	396	58,484	5,804	32,113,553	20,533,348	47,443,331	2.31	63.90
1901 .....	423	63,951	5,205	34,207,965	21,795,883	44,445,923	2.39	63.70
1902 .....	456	69,069	8,758	39,604,007	25,401,730	63,339,167	2.49	64.10
1903 .....	500	79,334	6,175	39,423,525	25,274,281	66,498,664	2.63	64.10
1904 .....	507	83,599	4,430	36,531,608	23,661,106	46,144,941	1.95	64.80
1905 .....	519	87,564	4,751	49,530,677	32,231,129	72,476,196	2.25	65.10
1906 .....	532	93,901	4,519	55,746,374	36,401,217	91,608,034	2.52	65.30

**BARYTES**

The following statement gives operators of Barytes properties and location of mines in Tennessee for 1907:

*Operators of Barytes Properties in Tennessee for 1907.*

COUNTY	OPERATOR		LOCATION OF WORKS
	NAME	POSTOFFICE	
Bradley .....	John T. Williams & Sons.....	Bristol, Va.....	Cleveland
Cocke .....	Commercial Mining & M. Co....	Knoxville .....	Del Rio
Cocke .....	John T. Williams & Sons.....	Bristol, Va.....	Del Rio
Greene .....	John T. Williams & Sons.....	Bristol, Va.....	Greeneville
Loudon .....	William D. Gilman Co.....	Sweetwater .....	Loudon, Dis. 5
Loudon .....	John T. Williams & Sons.....	Bristol, Va.....	Sweetwater
Loudon .....	John T. Williams & Sons.....	Bristol, Va.....	Philadelphia
McMinn .....	J. F. Doherty.....	Sweetwater .....	Sweetwater
McMinn .....	William D. Gilman Co.....	Sweetwater .....	Sweetwater
McMinn .....	John T. Williams & Sons.....	Bristol, Va.....	Sweetwater
McMinn .....	John T. Williams & Sons.....	Bristol, Va.....	Niota
Monroe .....	Commercial Mining & M. Co....	Knoxville .....	Sweetwater
Monroe .....	J. F. Doherty.....	Sweetwater .....	Sweetwater
Monroe .....	William D. Gilman Co.....	Sweetwater .....	Sweetwater
Monroe .....	C. L. Hudson.....	Niota .....	Sweetwater
Monroe .....	John T. Williams & Sons.....	Bristol, Va.....	Philadelphia
Monroe .....	John T. Williams & Sons.....	Bristol, Va.....	Reagan
Monroe .....	John T. Williams & Sons.....	Bristol, Va.....	Sweetwater

The following statement gives detailed operations in Tennessee for 1907 compared with 1906:

*Barytes Statistics for 1907 Compared With 1906.*

COUNTY	1907						1906		INCREASE	
	EMPLOYEES			PRODUCT			Product (Short Tons)	Value	Product (Short Tons)	Value
	Average Number	Av. Wages Paid Per Day	Total Wages Paid	Quantity (Short Tons)	Value	Value Per Ton				
Cocke							400	\$ 1,600	400	\$ 1,600
Loudon	44			3,273	\$ 7,380	\$ 2 25			3,273	7,380
McMinn	66			4,547	8,370	1 84	1,254	4,489	3,293	3,881
Monroe	121			13,043	30,113	2 30	00	350	12,943	29,763
Total	231	\$ 1 08	\$20,536	20,863	\$45,863	\$ 2 20	1,754	\$ 6,439	19,109	\$39,424

a—Decrease.

There are deposits containing ample reserves in the counties of Jefferson and Sevier also.

The only mill situated in Tennessee for the purpose of refining the product is that of William D. Gilman Company at Sweetwater.

## CLAY

The following statement gives classified product of clay mined and sold in Tennessee for 1907:

*Clay Mined and Sold in Tennessee for 1907 (Short Tons.)*

COUNTY	Total Number of Employees	CHARACTER OF CLAY MINED AND SOLD								Total
		Ball Clay	Brick Clay	Fire Clay	Kaolin	Saggar and Wad Clay	Slip Clay	Stoneware Clay	Wood Fiber Clay	
Anderson .....	4	.....	.....	40	.....	.....	.....	.....	.....	40
Fayette .....	13	.....	.....	.....	.....	.....	.....	3,100	.....	3,100
Henry .....	228	25,201	1,190	3,000	.....	12,625	1,843	540	.....	44,399
James .....	16	.....	.....	.....	.....	.....	.....	.....	2,387	2,387
Knox .....	2	.....	.....	.....	235	.....	.....	.....	.....	235
Madison .....	3	.....	.....	200	.....	.....	.....	.....	.....	200
Morgan .....	8	.....	.....	250	.....	.....	.....	.....	.....	250
Putnam .....	3	.....	.....	.....	.....	.....	.....	30	.....	30
Rhea .....	25	.....	.....	1,519	.....	.....	.....	8,943	.....	10,462
Total .....	302	25,201	1,190	5,009	235	12,625	1,843	12,613	2,387	61,103

## RECAPITULATION.

Total number of employees.....	302
Total amount paid for labor.....	\$79,386
Average wages paid per day.....	\$1.33

## Product and values:

Character of clay.	Product (Short tons)	Value
Ball clay .....	25,201	\$ 72,222
Brick clay .....	1,190	1,487
Fire clay .....	5,009	6,325
Kaolin .....	235	294
Saggar and wad clay.....	12,625	16,830
Slip clay .....	1,843	2,420
Stoneware clay.....	12,613	13,830
Wood fibre .....	2,387	3,460
Total .....	61,103	\$116,868

The clay given above is only such as is mined and sold as clay by the miner, and does not embrace the clay burned into clay products in Tennessee by the parties mining it. The clay thus sold is a small quantity compared with the clay consumed. Manufacturers of high-grade pottery and also some brick makers purchase their clay.

Tennessee has quite a large area of valuable and magnificent clay deposits, practically covering the entire State. When burned all colors are represented. White, Gray, Buff, Terra Cotta, Blue, etc.

The most extensive and variegated of these deposits under present development occur in Henry County. An analysis of one sample of this clay as submitted is as follows:

#### CHEMICAL ANALYSIS.

Silica .....	48.94
Alumina .....	36.69
Oxide of Iron.....	0.35
Lime .....	0.47
Magnesia .....	0.71
Potash .....	0.88
Soda .....	0.40
Loss on ignition .....	12.14
<b>Total .....</b>	<b>100.58</b>

The analysis is close to that of Kaolin, of which the theoretical proportions are:

Silver .....	46.3
Alumina .....	39.9
Water .....	13.8

Shrinkage in drying, 8 per cent., and does not crack or warp, and burns to a dense vitreous practically non-absorbent, and exceedingly hard, strong body when carried up to the temperature of its best vitrification.

Other analyses are as follows:

No. 1. Tennessee Ball Clay, Ultimate Analysis:	No. 3. Tennessee Ball Clay, Ultimate Analysis:
Volatile .....	Volatile .....
Silica .....	Silica .....
Alumina .....	Alumina .....
Iron Oxide .....	Iron Oxide .....
Calcium .....	Calcium .....
Magnesium .....	Magnesium .....
Potassium .....	Potassium .....
Sodium .....	Sodium .....
<b>Rational Analysis:</b>	<b>Rational Analysis:</b>
Clay substance .....	Clay substance .....
Silica .....	Silica .....
Feldspar .....	Feldspar .....

The No. 1 clay soaks readily in water and will pass through a No. 12 lawn leaving but little residue. It is very plastic and will stand a great deal of handling, when moulded, its tensile strength being about the same as the English ball clay. It will carry 65 per cent. of non-plastic material. When fired to cone 8 it shows a total shrinkage of 15 per cent., at which heat it burns to a clear dense body of excellent color.

The No. 3 clay soaks readily and on sifting through a No. 12 lawn leaves a residue of from 10 to 15 per cent., consisting mainly of fine grained sand. The sifting removes a great proportion of the iron found in the crude clay, it being in the form of iron pyrites. It is extremely plastic and will carry as high as 72 per cent. of flint, and is nearly an exact counterpart of the English ball clays. When fired its shrinkage at cone 1, is 12.5 per cent., and at cone 8, 18 per cent., at which heat it burns to a dense, vitrified body of a grayish white color.

The following is the analysis of No. 7 Tennessee ball clay:

Volatile .....	10.92
Silica .....	53.57
Alumina .....	32.82
Iron Oxide .....	1.31
Calcium .....	.62
Magnesium .....	.38
Potassium .....	.59
Sodium .....	.21
Rational Analysis:	
Clay substance .....	83.39
Silica .....	14.78
Feldspar .....	1.83

This analysis was taken from an unwashed sample and determination of iron on the same clay after washing and sifting through a No. 12 lawn shows a considerable decrease in iron oxide, leaving a residue of less than 1 per cent. At cone 8 it burns to a dense and practically non-absorbent body, showing a shrinkage of 14 per cent.

This clay is being used extensively by white ware potters and tile manufacturers as a substitute for English ball clay.

**CLAY PRODUCTS—BRICK AND TILE**

The following statement gives number of employes, classified brick product by counties and total value of all brick, flue goods, sewer pipe, tiling and other similar products in Tennessee for 1907:

*Brick, Tiling, Sewer Pipe and Kindred Products in Tennessee for 1907.*

COUNTY	Total Number of Employes	QUANTITY (Thousands)					Total Value All Brick, Drain Tile, etc.
		Common Brick	Vitrified Paving Brick	Frost Brick	Fancy or Ornamental Brick	Fire Brick	
Bedford	15	10		3			\$ 125
Blount	21	736					4,575
Bradley	9	500					3,500
Carroll	20	1,500					7,500
Carter	20	1,300					9,100
Cheatham		150					1,125
Cocke		200					1,600
Coffee	24	1,000		25			7,250
Davidson	280	30,408		5,843			198,487
DeKalb	19	273					1,584
Dickson	30	500					2,500
Dyer	10	170					850
Franklin	15	600					4,200
Gibson	73	4,594					27,431
Giles	6	120					720
Greene	55	1,100					13,012
Hamilton	348	21,778		2,000		1,100	254,093
Hardeman	28	750					5,000
Haywood	10	950					4,875
Henderson		50					650
Henry	20	160				100	2,300
Jefferson	6	150					1,000
Knox	281	22,425		1,462	78	176	159,975
Lauderdale	26	765					5,320
Lawrence	4	436					2,232
Lewis	6	150					750
Lincoln	30	600					4,800
Madison	110	3,200		800		900	42,200
Marshall	8	300					1,500
Mauzy	20	800					4,600
Montgomery	40	1,750					11,375
Obion	58	1,400				6	23,000
Putnam	28	775					4,750
Rhea	15	150					1,275
Robertson	10	500					3,000
Rutherford	26	410					16,500
Scott	160		8,139				97,523
Sevier	14	304					2,600
Shelby	237	34,649					253,037
Sullivan	20	900					6,300
Sumner	10	260					1,400
Tipton	20	800					5,600
Weakley	55	3,300					15,600
White	12	580		30			4,940
Total	2,199	141,453	8,139	10,163	78	2,282	\$1,219,754

## RECAPITULATION.

Total average number of employees.....	2,199
Total amount paid for labor .....	\$601,046
Average wages paid per day.....	\$1.38
Total average number of days active.....	200

Character of Product	Quantity	Value	Value Per 1,000
Common brick .....	141,453,000	\$ 875,673	\$ 6.13
Vitrified paving brick.....	8,139,000	97,523	12.00
Front brick .....	10,163,000	104,763	10.30
Fancy or ornamental brick.....	78,000	2,236	30.00
Fire brick .....	2,282,000	33,459	14.66
<b>Total brick .....</b>	<b>162,115,000</b>	<b>\$1,113,654</b>	<b>\$ 6.87</b>
Drain tile .....		\$ 35,100	
Flue goods .....		6,000	
Sewer pipe .....		65,000	

Grand total value..... \$1,219,754

Average cost of labor in common brick, per 1,000.....\$3.07

Average number common brick made by each man, per day..... 437

## POTTERY.

The following statement gives total average number of employees and value of pottery products for 1907, by varieties of product, by counties:

*Employees and Value of Pottery Products in Tennessee for 1907 by Varieties of Product, by Counties.*

COUNTY	Total Average No. of Employees	Red Earthenware, Value	Stoneware and Yellow Rocking-ham-ware, Value	Miscellaneous Value	Total Value	Total No. Kilns in Use
Carroll .....	3	\$200	\$ 1,100	.....	\$ 1,300	1
Davidson .....	40	.....	48,188	.....	48,188	5
DeKalb .....	8	180	150	\$ 50	380	1
Hamilton .....	60	.....	.....	a100,000	100,000	5
Hardeman .....	8	.....	4,200	.....	4,200	2
Madison .....	30	.....	12,000	.....	12,000	2
<b>Total .....</b>	<b>149</b>	<b>\$380</b>	<b>\$65,638</b>	<b>\$100,050</b>	<b>\$166,068</b>	<b>16</b>

a—Turpentine cups.

## RECAPITULATION.

Total number of employees .....	149
Average wages paid per day.....	\$ 1.30
Total amount paid for labor.....	\$46,818

The pottery business in Tennessee, which is only in its infancy, is gradually increasing. The clay beds in Henry County are capable of producing a high-class grade of pottery product, but the greater part of the product of this field is used by pottery plants of other States. For more complete data as to this and other clay in Tennessee reference is made to clay mines, first preceding brick and tile products.

## GAS, GAS COKE, TAR AND AMMONIA

While possibly the statistics presented in this chapter are not strictly included in a report upon mineral resources which is thought to be limited to the discussion of mineral production in the first marketable condition of the mineral product, the information is of interest as supplemental to the reports of the production of coal and of the manufacture of coke.

The chapter on coke does not include the coke obtained as a by-product in the manufacture of illuminating gas, commonly known as "gas-house coke."

Owing to having received only a partial report of one of the eight operating gas companies in Tennessee, and owing to the refusal of the President of the Nashville Gas Light Company to make out and send in his report as required by law, the department is unable to give all the detailed data in reference to this important subject it desired to submit.

From the latest available figures, however, the following statistics for the State as a whole for 1907, are submitted:

Total average number of employes.....	372
Average wages paid per day.....	\$ 1.65
Total amount paid for labor.....	\$191,925
Quantity and value of gas produced and sold by coal gas works for 1907:	
Coal carbonized (short tons).....	66,703
Total quantity of gas produced (cubic feet).....	588,245,663
Total quantity of gas sold for illuminating purposes (cubic feet).....	342,602,474
Total value of gas sold for illuminating purposes.....	\$341,101
Price per 1,000 cubic feet of gas sold for illuminating purposes.....	\$1.00
Total quantity of gas sold for fuel purposes (cubic feet).....	151,176,989
Total value of gas sold for fuel purposes.....	154,287
Price per 1,000 cubic feet of gas sold for fuel purposes.....	\$1.02
Total quantity of gas sold (cubic feet).....	493,779,463
Total value of gas sold.....	\$495,388
Price per 1,000 cubic feet of gas sold.....	\$1.00
Total quantity of gas unaccounted for (cubic feet).....	94,466,200
By-products:	
Total quantity of coal tar produced (gallons).....	754,135
Total value of coal tar produced.....	\$27,233
Value per gallon of coal tar produced (cents) .....	3.6
Yield in gallons per ton of coal.....	11.31
Anhydrous ammonia (N H <sub>3</sub> ) or equivalent (pounds).....	101,936
Total value of anhydrous ammonia (N H <sub>3</sub> ).....	\$5,546
Total quantity of coke produced (short tons).....	40,043
Total value of coke produced.....	\$125,793
Average value per ton of coke produced.....	\$3.14
Total value of illuminating and fuel coal gas.....	495,388
Total value of all by-products.....	\$158,572
Total value of all products.....	653,960

## OIL AND WATER GAS.

Total quantity of gas produced by oil and water gas works (cubic feet).....	365,781,400
Total quantity of gas sold for illuminating purposes (cubic feet).....	137,701,621
Total value of gas sold for illuminating purposes.....	\$137,702
Value per 1,000 cubic feet of gas sold for illuminating purposes.....	\$1.00
Total quantity of gas sold for fuel purposes (cubic feet).....	161,596,319

Total value of gas sold for fuel purposes.....	\$161,603
Value per 1,000 cubic feet of gas sold for fuel purposes.....	\$1.00
Total quantity of gas sold (cubic feet).....	299,297,940
Total value of gas sold.....	\$299,305
Value per 1,000 cubic feet of gas sold.....	\$1.00
Total quantity of gas unaccounted for (cubic feet).....	66,483,400

The figures for the United States as a whole show a decided increase in the use of gas for fuel and heating purposes. The average rate per 1,000 cubic feet in the United States for 1907 for oil and water gas was 95 cents, while the average rate for coal gas was only 67 cents per 1,000 cubic feet, which is possibly due to the larger proportion of oil and water gas being used for illuminating purposes, and also to the lower rate at which the by-product oven gas is sold.

**IRON ORE IN TENNESSEE, 1907**

The following statement gives name and postoffice of all iron ore mine operators and name and location of iron ore mines in Tennessee for 1907:

*Iron Ore Mine Operators and Mines in Tennessee for 1907.*

OPERATORS			MINE		
No.	COUNTY AND NAME	POSTOFFICE	No.	COUNTY AND NAME	POSTOFFICE
	<i>Campbell County.</i>			<i>Campbell County.</i>	
1	LaFollette C., I. & Ry. Co.	LaFollette .....	1	Hunter Branch.....	LaFollette
	<i>Carter County.</i>			<i>Carter County.</i>	
2	A. D. Reynolds.....	Butler .....	2	Limonite .....	Fish Springs
3	{ Va. Iron, Coal & Coke Co.	Bristol .....	3	{ Carpenter .....	Stony Creek
	{ Va. Iron, Coal & Coke Co.	Bristol .....	4	{ Taylor .....	Stony Creek
	<i>Claiborne County.</i>			<i>Claiborne County.</i>	
4	American Asso., Ltd....	Middlesboro, Ky.	5	Watts .....	Arthur
	<i>Cocke County.</i>			<i>Cocke County.</i>	
5	Commercial M. & M. Co.	Knoxville .....	6	Eureka .....	Del Rio
	<i>Davidson County.</i>			<i>Davidson County.</i>	
6	{ Red River Furnace Co....	Clarksville .....	7	{ Jackson .....	Goodlettsville
	{ Red River Furnace Co....	Clarksville .....	8	{ Polk .....	Bakers
	<i>Dickson County.</i>			<i>Dickson County.</i>	
7	Bon Air Coal & Iron Co...	Nashville .....	9	Iron Hill .....	.....
8	Red River Furnace Co...	Clarksville .....	10	Pomp .....	Pomp
	<i>Hamilton County.</i>			<i>Hamilton County.</i>	
9	Chattanooga Co., Ltd....	Chattanooga ...	11	Kuntz .....	Hill City
	<i>Hickman County.</i>			<i>Hickman County.</i>	
10	Bon Air Coal & Iron Co...	Nashville .....	12	Johnson .....	.....
11	Red River Furnace Co....	Clarksville .....	13	Spring Creek.....	Lyle
12	Standard Iron Co.....	Nashville .....	14	Nunnally .....	Nunnally
	<i>James County.</i>			<i>James County.</i>	
13	L. H. Adams.....	Ooltewah .....	15	White Oak .....	White Oak Mt
	<i>Johnson County.</i>			<i>Johnson County.</i>	
14	Forge Mt. Mining Co....	Mountain City..	16	Forge Mt.....	Mountain City
15	Taylor's Valley Iron Co..	Taylor's Val. Va.	17	Taylor's Valley.....	Taylor's Val. Va.
	{ Va. Iron, Coal & Coke Co.	Bristol .....	18	{ Gentry .....	Shouns
	{ Va. Iron, Coal & Coke Co.	Bristol .....	19	{ Haskell .....	Shouns
16	{ Va. Iron, Coal & Coke Co.	Bristol .....	20	{ Little Mt.....	Vaughtsville
	{ Va. Iron, Coal & Coke Co.	Bristol .....	21	{ Yellow Hill.....	Shouns
17	Ward Iron Co.....	Abingdon, Va..	22	Ward .....	Ward
	<i>Lawrence County.</i>			<i>Lawrence County.</i>	
18	Napier Iron Works.....	Nashville .....	23	Ferro .....	Ferro
19	Pinckney Mining Co....	Pinckney .....	24	Tucker .....	Pinckney
20	Rockdale Iron Co.....	Rockdale .....	25	Gray .....	Pinckney
	{ Sheffield Coal & Iron Co..	Sheffield, Ala..	26	{ Hessmer, No. 1.....	West Point
	{ Sheffield Coal & Iron Co..	Sheffield, Ala..	27	{ Hessmer, No. 2.....	West Point
21	{ Sheffield Coal & Iron Co..	Sheffield, Ala..	28	{ Smith .....	West Point
	{ Sheffield Coal & Iron Co..	Sheffield, Ala..	29	{ West Point .....	West Point
	<i>Lewis County.</i>			<i>Lewis County.</i>	
22	Warner Iron Co.....	Nashville .....	30	Percy .....	Riverside
	<i>Meigs County.</i>			<i>Meigs County.</i>	
23	Dayton Coal & Iron Co..	Dayton .....	31	Crescent .....	Euchee
	<i>Monroe County.</i>			<i>Monroe County.</i>	
24	Tennessee Ore Co.....	Sweetwater .....	32	Cleveland .....	Sweetwater

*Iron Ore in Tennessee for 1907.—(Continued.)*

OPERATORS			MINE		
No.	COUNTY AND NAME	POSTOFFICE	No.	COUNTY AND NAME	POSTOFFICE
<i>Montgomery County.</i>			<i>Montgomery County.</i>		
25	Red River Furnace Co...	Clarksville .....	33	Louise .....	Louise
<i>Polk County.</i>			<i>Polk County.</i>		
26	Va. Iron, Coal & Coke Co.	Bristol .....	34	Burra Burra .....	Ducktown
	Va. Iron, Coal & Coke Co.	Bristol .....	35	Cherokee .....	Ducktown
	Va. Iron, Coal & Coke Co.	Bristol .....	36	Eureka .....	Ducktown
	Va. Iron, Coal & Coke Co.	Bristol .....	37	Isabella .....	Ducktown
	Va. Iron, Coal & Coke Co.	Bristol .....	38	London .....	Ducktown
27	Va. Iron, Coal & Coke Co.	Bristol .....	39	Ocoee .....	Ducktown
	<i>Rhea County.</i>		<i>Rhea County.</i>		
28	Ewing Mining Co.....	Rhea Springs..	40	Ewing .....	Rhea Springs
28	Underwood & Son.....	Rockwood .....	41	Underwood .....	Lorraine
<i>Roane County.</i>			<i>Roane County.</i>		
29	Baker Mining Co.....	Rockwood .....	42	Baker .....	Glen Alice
	Baker Mining Co.....	Rockwood .....	43	Glen Alice.....	Glen Alice
	Brown Mining Co.....	Cardiff .....	44	Baker .....	Cardiff
	Brown Mining Co.....	Cardiff .....	45	Cardiff .....	Cardiff
30	Brown Mining Co.....	Cardiff .....	46	Carter .....	Cardiff
	Brown Mining Co.....	Cardiff .....	47	Howard .....	Cardiff
	Brown Mining Co.....	Cardiff .....	48	Patton .....	Cardiff
	Brown Mining Co.....	Cardiff .....	49	Prospect .....	Cardiff
31	Brown Mining Co.....	Cardiff .....	50	Wright .....	Cardiff
	Ironton Ore Co.....	Rockwood .....	51	Ironton .....	Hatch
32	Roane Iron Co.....	Rockwood .....	52	Welker .....	Kingston
<i>Stewart County.</i>			<i>Stewart County.</i>		
33	Dover Iron Co.....	Bear Springs..	53	Bear Spring.....	Bear Spring
	Dover Iron Co.....	Bear Springs..	54	Bear Spg. (Contractors)	Bear Spring
<i>Unicoi County.</i>			<i>Unicoi County.</i>		
34	Embree Iron Co.....	Embreeville ..	55	Fowler .....	Embreeville
	Embree Iron Co.....	Embreeville ..	56	McNabb .....	Embreeville
	Embree Iron Co.....	Embreeville ..	57	Polly Hollow.....	Embreeville
	Embree Iron Co.....	Embreeville ..	58	Starnes .....	Embreeville
	Embree Iron Co.....	Embreeville ..	59	West Ore Bank.....	Embreeville
<i>Washington County.</i>			<i>Washington County.</i>		
35	Embree Iron Co.....	Embreeville ..	60	Klondyke .....	Embreeville
	Embree Iron Co.....	Embreeville ..	61	Number 10.....	Embreeville
	Embree Iron Co.....	Embreeville ..	62	Pee Dee.....	Embreeville
	Embree Iron Co.....	Embreeville ..	63	Sugar Hollow.....	Embreeville
	Embree Iron Co.....	Embreeville ..	64	Tunnel .....	Embreeville
36	Embree Iron Co.....	Embreeville ..	65	Yates' Hollow.....	Embreeville
	<i>Wayne County.</i>		<i>Wayne County.</i>		
36	Bon Air Coal & Iron Co...	Nashville .....	66	Mannie .....	Allen's Creek
	Bon Air Coal & Iron Co...	Nashville .....	67	Wayne .....	Allen's Creek

For convenience Tennessee is divided into three iron ore districts. The eastern district is comprised of the counties of Blount, Carter, Cocke, Greene, Johnson, McMinn, Monroe, Polk, Sevier, Sullivan, Unicoi and Washington.

The middle district is comprised of the counties of Anderson, Bledsoe Campbell, Claiborne, Hamilton, Hancock, James, Marion, Meigs, Rhea Roane Sequatchie and Union.

The western district is comprised of the counties of Benton, Decatur, Dickson, Hardin, Hickman, Humphreys, Lawrence, Lewis, Montgomery, Perry, Stewart and Wayne.

The most notable feature connected with iron ore mining for the year was the initial production of ore in Carter, Davidson and Monroe Counties.

Roane County, which was forced to yield first position in rank for 1906 to Lawrence, has again assumed the lead in iron ore product. Lawrence County, however, still maintains the lead as to ore values. Johnson and Unicoi Counties, which were not numbered with the ore producing counties for 1905, now occupy fifth and seventh positions in rank as to product, respectively.

The following statement shows total average number of employes, classified character and value of product, and explosives used in the operation of the iron ore mines in Tennessee for 1907:

*Iron Ore Operations in Tennessee for 1907*

COUNTY	Total Average Number of Empl yrs	CHARACTER OF PRODUCT (Long Tons)			VALUE OF PRODUCT		EXPLOSIVES USED	
		Brown Hematite	Red Hematite	Total	Total Value	Value Per Ton	Dynamite (Pounds)	Powder (Kegs)
		1	5	6	7	9	10	11
Carter .....	25	1,557	.....	1,557	\$ 6,935	\$....	50	1
Davidson .....	25	.....	4,464	4,464	3,348	0.75	2,500	.....
Dickson .....	32	10,000	.....	10,000	18,000	1.80	.....	.....
Hickman .....	111	46,694	.....	46,694	73,000	1.56	.....	.....
James .....	1	.....	33	33	92	2.80	.....	.....
Johnson .....	223	59,185	.....	59,185	88,477	1.50	21,525	481
Lawrence .....	355	167,336	.....	167,336	361,048	2.15	4,220	3,627
Lewis .....	90	29,342	.....	29,342	36,667	1.25	2,300	1,233
Meigs .....	125	.....	32,000	32,000	60,070	1.87	2,560	.....
Monroe .....	12	.....	6,100	6,100	8,113	1.33	.....	.....
Montgomery .....	30	9,000	.....	9,000	13,500	1.50	.....	.....
Polk .....	255	.....	74,644	74,644	78,144	1.05	33,650	316
Rhea .....	17	.....	5,090	5,090	7,135	1.40	500	2
Roane .....	509	.....	223,458	223,458	292,445	1.31	17,200	7,880
Stewart .....	73	8,610	.....	8,610	8,610	1.00	600	.....
Unicoi .....	79	34,711	.....	34,711	52,066	1.50	4,150	410
Washington .....	85	24,015	.....	24,015	36,021	1.50	500	.....
Wayne .....	260	81,528	.....	81,528	163,056	2.00	5,500	1,472
Total .....	2,307	471,978	345,789	817,767	\$1,306,727	\$1.60	95,255	15,422

RECAPITULATION.

Total average number of employes.....	2,307
Average wages paid per day.....	\$1.49
Total wages paid.....	\$772,067
Average number of days active.....	225

The total value of the Brown Hematite ore amounted to \$857,380, or \$1.81 per ton. The total value of the Red Hematite ore amounted to \$449,347, or \$1.30 per ton.

The deposits in the counties of Cocke, Dickson, Hickman, Johnson, Lawrence, Lewis, Montgomery, Stewart, Unicoi, Washington and Wayne are in pockets.

The deposits in remaining counties under present development occur in ore seams or veins.

The total product for the year amounted to 817,767 long tons, valued at \$1,306,727, or \$1.60 per ton.

As compared with 1906 this is a decrease in product of 61,292 long tons, or 7 per cent., an increase in value of \$53,874, or 4.3 per cent., and an increase in value per ton of 18 cents.

All iron ore product was consumed by the various producers or subsidiary companies in the manufacture of pig iron, except 15,087 long tons, which sold for \$23,011, or \$1.53 per ton.

For the percentage of metallic iron in the various ore product, reference is made to the statistics on pig iron immediately following the subject of iron ores.

The following statement shows product and value of iron ore produced in Tennessee for 1907 compared with 1906 by counties, showing increases and decreases:

*Product and Value of Iron Ore in Tennessee for 1907 Compared With 1906.*

COUNTY	1907		1906		INCREASE	
	Product (Long Tons)	Value	Product (Long Tons)	Value	Product (Long Tons)	Value
Campbell .....			37,478	\$ 48,721	a37,478	a48,721
Carter .....	1,557	\$ 6,935			1,557	6,935
Cocke .....			250	450	a 250	a 450
Davidson .....	4,464	3,348			4,464	3,348
Dickson .....	10,000	18,000	12,000	16,000	a2,000	2,000
Hamilton .....			1,550	2,325	a1,550	a2,325
Hickman .....	46,694	73,000	37,450	51,175	9,244	21,825
James .....	33	92			33	92
Johnson .....	59,185	88,477	39,699	69,474	19,486	19,003
Lawrence .....	167,336	361,048	243,578	391,477	a76,242	a30,429
Lewis .....	29,342	36,667	36,151	57,841	a6,809	a21,174
Meigs .....	32,000	60,070	21,734	27,167	10,266	32,905
Monroe .....	6,100	8,113			6,100	8,113
Montgomery .....	9,000	13,500	10,000	12,000	a1,000	1,500
Polk .....	74,644	78,144	78,714	118,070	a4,070	a39,926
Rhea .....	5,090	7,135	1,100	1,650	3,990	5,485
Roane .....	223,458	292,445	213,688	245,317	9,770	47,128
Stewart .....	8,610	8,610	8,781	10,976	a 171	a2,366
Unicoi .....	34,711	52,066	8,195	14,752	26,516	37,314
Washington .....	24,015	36,021	44,717	80,491	a20,702	a44,470
Wayne .....	81,528	163,056	83,974	104,967	a 2,446	58,089
<b>Total .....</b>	<b>817,767</b>	<b>\$1,306,727</b>	<b>879,059</b>	<b>\$1,252,853</b>	<b>a61,292</b>	<b>\$53,874</b>

a—Decrease.

*Production and Value of Iron Ore in Tennessee from 1892 to 1907, Inclusive.*

YEAR	Product (Long Tons)	Value	Value per Ton	YEAR	Product (Long Tons)	Value	Value per Ton
1892 .....	406,578			1901 .....	620,458		
1893 .....	372,996			1902 .....	628,870	\$ 754,644	\$1.20
1894 .....	292,831			1903 .....	724,264	878,909	1.21
1895 .....	519,796			1904 .....	539,820	613,705	1.14
1896 .....	535,484			1905 .....	730,981	962,427	1.32
1897 .....	604,497			1906 .....	879,059	1,252,853	1.42
1898 .....	617,579			1907 .....	817,767	1,306,727	1.60
1899 .....	667,149						
1900 .....	699,724						

# IRON (PIG)

The following statement shows name and postoffice address of all pig iron manufacturers and furnaces in Tennessee for 1907:

## Pig Iron Manufacturers and Furnaces in Tennessee for 1907.

MANUFACTURERS			FURNACE		
No.	COUNTY AND NAME	POSTOFFICE	No.	COUNTY AND NAME	LOCATION
	<i>Campbell County.</i>			<i>Campbell County.</i>	
1	LaFollette C., I. & Ry. Co.	LaFollette .....	1	LaFollette .....	LaFollette
	<i>Dickson County.</i>			<i>Dickson County.</i>	
2	Warner Iron Co.....	Nashville .....	2	Cumberland .....	Cumb. Furnace
	<i>Hamilton County.</i>			<i>Hamilton County.</i>	
3	Citico Furnace Co.....	Chattanooga .....	3	Citico .....	Chattanooga
4	Southern Steel Co.....	Birmingham, Ala.	4	aChattanooga ....	Chattanooga
	<i>Hickman County.</i>			<i>Hickman County.</i>	
5	Bon Air Coal & Iron Co...	Nashville .....	5	aWarner .....	Warner
6	J. J. Gray.....	Rockdale .....	6	aAetna .....	Aetna
7	Standard Iron Co.....	Nashville .....	7	Standard .....	Goodrich
	<i>Lawrence County.</i>			<i>Lawrence County.</i>	
8	Napier Iron Works.....	Nashville .....	8	Napier .....	Napier
	<i>Marion County.</i>			<i>Marion County.</i>	
9	{ Tenn. C., I. & R. R. Co....	Birmingham, Ala. ...	9	aSouth Pittsburg 1	South Pittsburg
	{ Tenn. C., I. & R. R. Co....	Birmingham, Ala. ...	10	aSouth Pittsburg 2	South Pittsburg
	{ Tenn. C., I. & R. R. Co....	Birmingham, Ala. ...	11	aSouth Pittsburg 3	South Pittsburg
	<i>Maury County.</i>			<i>Maury County.</i>	
10	Rockdale Iron Co.....	Rockdale .....	12	Rockdale .....	Rockdale
	<i>Montgomery County.</i>			<i>Montgomery County.</i>	
11	Red River Furnace Co....	Clarksville .....	13	Red River.....	Clarksville
	<i>Rhea County.</i>			<i>Rhea County.</i>	
12	{ Dayton Coal & Iron Co...	Dayton .....	14	Dayton (1).....	Dayton
	{ Dayton Coal & Iron Co...	Dayton .....	15	Dayton (2).....	Dayton
	<i>Roane County.</i>			<i>Roane County.</i>	
13	{ Roane Iron Co.....	Rockwood .....	16	Rockwood (1)....	Rockwood
	{ Roane Iron Co.....	Rockwood .....	17	Rockwood (2)....	Rockwood
	{ Roane Iron Co.....	Rockwood .....	18	Rockwood (3)....	Rockwood
	<i>Stewart County.</i>			<i>Stewart County.</i>	
14	{ Dover Furnace, Co.....	Carlisle .....	19	bBear Spring.....	Bear Spring
	{ Dover Furnace Co.....	Carlisle .....	20	abDover .....	Carlisle
	<i>Washington County.</i>			<i>Washington County.</i>	
15	Cranberry Furnace Co....	Cranberry, N.C.....	21	Cranberry .....	Johnson City
16	Embree Iron Co.....	Embreeville .....	22	Embree .....	Embreeville
	<i>Wayne County.</i>			<i>Wayne County.</i>	
17	{ Bon Air Coal & Iron Co...	Nashville .....	23	Mannie (1).....	Allen's Creek
	{ Bon Air Coal & Iron Co...	Nashville .....	24	Mannie (2).....	Allen's Creek

a—Not active.

b—Coal blast charcoal furnaces.

The ore treated is practically all obtained from the country surrounding the location of the furnaces, and by examining the percentage of yield of ore in pig iron, comparative value of the ore produced can be determined.

As compared with 1906 pig iron product shows a decrease of 43,080 long tons, or 10 per cent., and pig iron values show an increase of \$660,025, or 14 per cent.

The decrease in product was due to the closing down of the furnace at LaFollette, which, in 1906, produced 21,968 long tons, and a decrease by both Dayton and Rockwood.

Trade conditions were good, the average price for the year being \$17.65, as against \$14.60 for 1906.

The following statement shows average number of employees, average number of days active, quantity of iron ores treated, percentage of yield of ore in iron and quantity of pig iron produced in Tennessee for 1907:

*Pig Iron Employes, Ores Treated and Pig Iron Product in Tennessee for 1907.*

COUNTY	Average Number of Employes	Average No. Days Active	Iron Ore Treated (L. Tons)	Pig Iron Produced (L. Tons)	Yield of Ore in Iron (Per Cent)
Dickson .....	150	360	39,579	22,718	57.40
Hamilton .....	280	345	219,431	87,193	40.00
Hickman .....	66	360	33,784	18,246	54.00
Lawrence .....	68	360	37,750	21,881	50.80
Maury .....	30	218	21,855	10,308	46.00
Montgomery .....	120	350	59,000	28,000	47.46
Rhea .....	280	300	144,040	56,764	40.00
Roane .....	150	323	139,388	56,862	40.80
Stewart .....	30	280	10,000	2,308	23.00
Washington .....	248	347	125,753	51,978	41.33
Wayne .....	153	326	72,386	35,050	50.00
Total .....	1,575	335	902,966	391,308	43.33

RECAPITULATION.

Total number of employes.....	1,575
Average wages paid per day.....	\$1.45
Total amount paid for labor.....	\$763,121
Total product (long tons).....	391,308
Total value of product.....	\$6,907,072
Average value per ton of product.....	\$17.65
Stock on hand at beginning of year (long tons).....	15,635
Stock on hand at end of year (long tons).....	20,894

Material used in the manufacture of pig iron:

Iron ore (long tons).....	902,966
Coke (short tons).....	708,314
Flux (limestone, etc.) (long tons).....	296,173
Scrap (long tons).....	30
Mill cinders (long tons).....	8,628

The average percentage of cost that each of the ingredients necessary in pig iron manufacture bear to the total average cost of pig iron for the year is as follows: Labor, 15.95 per cent.; iron ore, 34.30 per cent.; coke, 46.64 per cent., and fluxing, 3.11 per cent.

These figures do not include freight on coke purchased.

The following gives classified value and product of the pig iron produced in Tennessee for the year:

Character of product	Amount of Product. (Long Tons)	Value of Product	Value per ton of Product.
Cold blast.....	2,308	\$ 69,240	\$30.00
No. 1 soft.....	37,099	690,336	18.60
No. 2 soft.....	49,374	866,815	17.55
No. 1 foundry.....	9,315	183,127	19.73
No. 2 foundry.....	119,424	2,041,739	17.10
No. 3 foundry.....	33,368	543,275	16.28
No. 4 foundry.....	33,206	526,101	16.00
Gray forge.....	9,473	142,505	15.05
Mottled white.....	5,241	76,779	14.65
Silvery .....	75	1,200	16.00
Furnace scrap.....	1,895	29,472	15.55
Castings .....	8	240	30.00
Analysis grading:			
Low in silican, 2½ to 3 per cent.....	143	2,081	14.50
Over .05 sulphur .....	1,763	30,337	17.20
Under .05 sulphur.....	66,781	1,214,856	18.19
Over .04 phosphorous (Bessemer).....	2,570	41,058	16.00
Under .04 phosphorous.....	19,265	447,911	23.25
Total .....	391,308	\$6,907,072	\$17.65

**LIME**

The following statement shows total number of employes and total quantity and value by counties of lime burned by works reported active in Tennessee for 1907.

*Lime Statistics in Tennessee for 1907.*

COUNTY	Total Number of Em- ployes.	Quantity of Lime Burned (S. Tons)	Value of Lime Burned	Value Per Ton of Lime Burned
Coffee .....	12	4,500	\$ 13,500	\$3.00
Davidson .....	1	384	1,607	4.20
Dickson .....	40	8,000	28,000	3.50
Franklin .....	80	15,000	45,000	3.00
Giles .....	5	780	2,574	3.30
Hamilton .....	15	2,500	12,500	5.00
Houston .....	50	14,000	44,800	3.20
James .....	23	3,350	8,844	2.60
Knox .....	36	13,762	35,450	2.57
Lawrence .....	1	18	91	5.05
Maury .....	4	125	625	5.00
Rhea .....	65	8,100	42,750	5.27
Union .....	25	2,694	8,351	3.10
<b>Total .....</b>	<b>357</b>	<b>73,213</b>	<b>\$244,092</b>	<b>\$3.33</b>

**RECAPITULATION.**

Total average number of employes.....	357
Average wages paid per day.....	\$1.40
Total amount paid for labor.....	\$107,725
Total number days active.....	215
Total quantity of stone burned (short tons).....	117,507
Total value of stone burned.....	\$56,243
Estimated cost of fuel.....	\$67,043
Fuel used in burning lime:	
Wood (cords).....3,018	Lime product (short tons)..... 8,018
Coal (short tons).....8,925	Lime product (short tons).....25,389
Mixed fuels:	
Coal (short tons)..... 50	} Lime product (short tons)..... 125
Coke (short tons)..... 20	
Wood (cords).....8,000	} Lime products (short tons) .....39,681
Coal (short tons).....13,200	
Total Lime Product.....	73,213

**USES OF LIME PRODUCT.**

The following statement shows lime production for 1907 classified according to the uses to which the product was reported by the burners to have been put:

*Production of Lime in Tennessee for 1907 by Uses*

USE	Quantity (S. Tons)	Value
Building lime.....	39,707	\$140,007
Chemical works.....	7,000	21,000
Paper mills.....	6,876	19,941
Sugar factories.....	3,000	10,500
Tanneries .....	1,120	3,308
Fertilizer .....	65	262
Dealers (uses not specified).....	15,487	49,038
Other uses.....	8	86
<b>Total .....</b>	<b>73,213</b>	<b>\$244,092</b>

## MANGANESE

The manganese ores of Tennessee occur near the eastern border of the Appalachian Valley deposits. The only deposits now known occur in Cocke County, near Newport and Del Rio, and near Shady Valley, in Johnson County.

The ore is both soft and hard, the soft ore occurring in pockets and seams associated with clays, and the latter in irregular masses scattered through the clay and soft ore pockets.

### USES.

The following paragraph, which is an extract from an article written upon the subject by Mr. E. C. Harder, of the United States Geological Survey, 1907, will be found of interest:

"The uses of Manganese in the industries may be classified as follows: 1. Metallurgical in the manufacture of alloys and in copper and silver reduction; (2) chemical as an oxidizer, and as a coloring material. The manganese ores used in the manufacture of alloys are dependent in value upon the percentage of metallic manganese present and on the absence of injurious substances like phosphorous and sulphur. The latter is especially true in the case of the alloys with iron. Spiegeleisen and ferro-manganese are alloys of iron and manganese. The former contains below 20 per cent. manganese, while the latter has a manganese content ranging from 20 per cent. to 90 per cent., above which the alloy becomes unstable. Silicon and carbon are present in varying quantities. Spiegeleisen and ferro-manganese are used in the manufacture of steel in the following ways: (a) as reducers of iron oxide in the final melting, in which case the manganese oxide formed goes into the slag; (b) as recarburizers of steel, in which case they contain desirable carbon; (c) for counteracting the effects of phosphorous and sulphur by the formation of manganese compounds with these elements; (d) in the manufacture of manganese steel used for railroad and street car rails and curves, for burglar-proof safes, for car wheels, and for other purposes. The addition of small quantities of manganese gives to steel hardness, ductility and strength.

"Manganese is also used to form alloys with copper, zinc, aluminum, tin, lead, magnesium and silicon, and with combination of these metals.

"Manganese oxides are used to a slight extent in copper and silver reduction as a substitute for iron oxides.

"As an oxidizer manganese oxide is used in the manufacture of chlorine, bromine and oxygen, and of disinfectants like potassium permanganate; as a drier in paints and varnishes; as a decolorizer of glass, and in the Leclanche battery. In these cases the value of the ore depends on its available oxygen content—that is, on its percentage of pyrolusite or manganese peroxide.

"As a coloring material manganese is used in calico dyeing; for coloring bricks, glass and pottery, and in the manufacture of green and violet paints.

"Compounds of manganese are used in a small way for medicine, and the mineral rhodonite, a silicate of manganese, is used rarely for ornamental purposes on account of its beautiful pink color."

### PRODUCTION.

Total number of employees.....	5
Average wages paid per day.....	\$1.25
Total amount paid for labor.....	\$1,750
Total Product (long tons).....	150
Total value.....	\$2,250
Average price per ton.....	\$15.00

The above product was all taken from the Del Rio region, and contains 60 per cent. manganese, and 6 per cent. of iron.

**METAL**

The following chapter on metals gives the gold, silver, copper, lead and zinc production in Tennessee for 1907:

*Gold, Silver, Copper, Lead and Zinc Product in Tennessee for 1907.***GOLD.**

Total product in fine ounces.....	253.5
Total value .....	\$5,239.80

This was all obtained from pig copper in Polk County.

**SILVER.**

Total product in fine ounces.....	85,532.2
Total value.....	\$55,875.61

This was all taken from pig copper in Polk County.

**COPPER.**

The Ducktown Sulphur, Copper & Iron Co., Limited, at Isabella, Tenn., with home office in London, England, and the Tennessee Copper Co. at Copper Hill, Tenn., were the only active operations in Tennessee for 1907.

The Virginia Iron Coal & Coke Company, at Bristol, operates under lease all iron ore deposits, including that of the "school property" belonging to Ocoee Township, in the district. Operations for both companies for 1907 are as follows:

Total average number of employees.....	743
Average wages paid per day.....	\$2.03
Total amount paid for labor.....	455,495
Quantity of crude ore produced.....	548,171
Value of product (crude ore).....	\$1,370,200
Value per ton of crude ore.....	\$2.50
Quantity of crude ore treated (short tons).....	557,950
Refined copper produced (pounds).....	18,892,309
Value of refined copper produced.....	\$3,652,720
Average value of refined copper per pound (cents).....	.193
Yield (per cent) short tons refined copper per ton of crude ore.....	1.72
Yield in pounds of metal per ton of crude ore.....	33.86
Stock on hand at beginning of year (pounds).....	1,276,563
Stock on hand at end of year (pounds).....	1,478,145
Sales during the year (pounds).....	18,690,727
Value of sales.....	\$3,614,420

As compared with 1906 the copper product shows an increase of 1,537,528 pounds, or 9 per cent., and an increase in value of \$440,754, or 13.7 per cent.

The Ducktown mineral district furnished all of the copper product for the year. This product came from the Calloway, East Tennessee, and Mary mines of the Ducktown Sulphur, Copper & Iron Co., Limited, and from the Burra Burra, London and Polk County mines of the Tennessee Copper Company. The mines of the Ducktown Company are equipped with a 500-ton smelter. The ore of the Tennessee Copper Company is practically smelted in a 1,600-ton smelter with converting plant. This latter company exports Bessemer copper to Europe.

## LEAD.

The lead production amounted to 85 tons concentrates, or about 15,650 pounds of metal, valued at \$785, or 5 cents per pound. This production came from Bradley and Claiborne Counties.

## ZINC.

The zinc production amounted to 4,118 tons in ore, or about 251,198 pounds of metal, valued at \$14,821. This production came from the counties of Bradley, Claiborne, Jefferson and Knox.

It is impossible to separate the cost of labor in mining the lead and zinc ore because the mines produce both ores in nearly all instances. The labor statistics are therefore given for both.

Total average number of employees.....	90
Average wages paid per day.....	\$1.70
Total amount paid for labor.....	\$12,800

The value and product of copper, lead and zinc in Tennessee for 1907 by counties will be found in the following table:

*Production of Copper, Lead and Zinc in Tennessee in 1907 by Counties.*

COUNTY	COPPER			LEAD			ZINC	
	Total No. Employees	Quantity (Pounds)	Value	Total No. Employees (Lead and Zinc)	Quantity (Pounds)	Value	Quantity (Pounds)	Value
Bradley .....	.....	.....	.....	30	15,200	\$760	3,050	\$ 181
Claiborne .....	.....	.....	.....	20	450	25	45,750	2,700
Jefferson .....	.....	.....	.....	20	.....	.....	196,298	11,582
Knox .....	.....	.....	.....	20	.....	.....	6,100	358
Polk .....	743	18,892,309	\$3,652,720	.....	.....	.....	.....	.....
Total .....	743	18,892,309	\$3,652,720	90	15,650	\$785	251,198	\$14,821

The product and values of lead and zinc in Tennessee including prospects since operations began, are as follows:

*Lead and Zinc Product and Values in Tennessee, 1902-1907.*

	LEAD		ZINC	
	Product (Concentrates) (Short Tons)	Value	Product (Concentrates)	Value
1902 .....	100	2,000	54	1,620
1903 .....	160	5,760	204	6,120
1904 .....	180	7,200	73	1,204
1905 .....	220	10,670	101	2,874
1906 .....	75	3,750	25	750
1907 .....	85	785	4,118	14,821

Lead and zinc operators in Tennessee, including prospects, are as follows:

Bradley County, Chatata Lead and Zinc Company, Nashville, Hardwick mine.

Claiborne County, Tennessee Zinc Company, New Tazewell.

Jefferson County, New Market Zinc Company, New Market.

Knox County, Holston Zinc Company, Mascot.

Roseberry Zinc Company, Mascot.

C. A. Weller, Knoxville.

Washington County, East Tennessee Mining and Development Company, Fall Branch.

The following table shows results of copper operations in Tennessee from 1898 to 1907, inclusive:

*Total Product and Values of Copper Produced in Tennessee from 1898, the First Year of Activity, to 1907, Inclusive.*

YEAR	PRODUCT AND VALUE			Crude Ore Treated (Short Tons)	REFINED COPPER AND VALUE			Yield of Refined Copper (S Pounds for each ton crude ore treated)	Yield in Pounds of Metal for Each Ton of Crude Ore
	Quantity (Short Tons)	Value Crude Ore	Value Per Ton		Quantity (Pounds)	Value	Value Per Pound (Cents)		
1898 .....	95,568	\$ 205,471	\$2.15	80,083	3,240,740	\$ 356,481	.11	2.01	34.
1899 .....	112,118	285,900	2.55	82,184	3,357,141	559,635	.1667	2.04	30.
1900 .....	118,942	303,302	2.55	97,564	3,454,132	559,223	.1616	1.77	29.04
1901 .....	267,830	669,575	2.50	162,461	5,732,048	908,914	.15857	1.71	21.40
1902 .....	333,239	716,463	1.15	335,864	12,284,515	1,367,421	.11131	1.82	36.86
1903 .....	319,873	719,714	2.25	370,278	13,668,389	1,809,011	.13235	1.84	42.76
1904 .....	287,830	641,860	2.23	384,886	13,905,018	1,721,549	.1239	1.81	48.31
1905 .....	384,192	864,432	2.25	399,330	14,541,425	2,219,938	.1526	1.87	37.85
1906 .....	539,381	1,321,483	2.45	538,141	17,354,781	3,211,966	.185	1.61	32.20
1907 .....	548,171	1,370,200	2.50	557,950	18,892,309	3,652,720	.193	1.72	33.86

**MINERAL PAINTS**

The following statement shows the production of mineral paints in Tennessee by counties for 1907:

*Production and Value of Mineral Paints in Tennessee for 1907.*

COUNTY	Total Number of Employees	METALLIC PAINT		VENETIAN RED		TOTAL	
		Quantity (Short Tons)	Value	Quantity (Short Tons)	Value	Quantity (Short Tons)	Value
Bradley .....	20	1,500	\$13,500	.....	.....	1,500	\$13,500
Cheatham .....	12	400	12,000	.....	.....	400	12,000
Humphreys .....	12	.....	.....	300	\$6,000	300	6,000
James .....	10	500	4,500	.....	.....	500	4,500
Total .....	54	2,400	\$30,000	300	\$6,000	2,700	\$36,000

**RECAPITULATION.**

Total average number of employees.....	54
Average wages paid per day.....	\$1.50
Total amount paid for labor.....	\$13,900
Total product, short tons.....	2,700
Total value .....	\$36,000

The following table shows the production and value of mineral paints in the United States for 1906. (Short tons.)

KIND	1906	
	Quantity	Value
Ocher.....	15,482	\$ 148,049
Umber .....	657	17,394
Sienna.....		
Metallic Paint.....	17,992	204,026
Mortar Colors.....	10,309	111,720
Sublimed Blue Lead.....	.....	.....
Sublimed White Lead.....	7,988	958,440
Zinc Lead .....	8,124	681,292
Zinc Oxide.....	74,680	5,999,378
Slate <sup>b</sup> .....	5,481	40,540
Total.....	140,713	\$ 8,160,836

<sup>b</sup>—Slate and shale ground for pigments.

Practically all ocher produced for the year 1906 came from Georgia and Pennsylvania.

**MINERAL WATERS**

The following table shows quantity and value by uses of mineral waters sold in Tennessee by counties for 1907:

*Production and Value of Mineral Waters in Tennessee for 1907 by Counties.*

COUNTY	Number of Springs Reporting Sales	Quantity Sold (Gallons)	Average Retail Price Per Gallon at Spring	Value of Medicinal Waters	Value of Table Waters	Total Value of Mineral Waters
Blount .....	1	1,500	\$0.04	\$ 32	\$ 28	\$ 60
Cheatham .....	1	9,069	.045	408	45	453
Davidson .....	5	478,100	.07	24,155	8,775	32,930
Franklin .....	1	666	.45	300	.....	300
Grainger .....	1	150,000	.18	27,000	.....	27,000
Hawkins .....	1	30,000	.125	3,750	.....	3,750
Henderson .....	1	20,000	.10	1,300	700	2,000
Hickman .....	1	10,000	.125	1,250	.....	1,250
Macon .....	1	2,310	.60	1,386	.....	1,386
Montgomery .....	1	1,500	.10	150	.....	150
Rhea .....	1	50,000	.10	3,500	1,500	5,000
Williamson .....	1	12,000	.15	1,200	.....	1,200
Wilson .....	2	34,400	.15	5,160	.....	5,160
Total .....	18	799,545	\$0.10	\$69,591	\$11,048	\$80,639

It will be observed from this statement that Davidson County ranks first in quantity of mineral water produced, and also first in value, with Grainger County second, Wilson third and Rhea fourth.

In addition to the springs above shown Tennessee has many springs in every section of Middle and East Tennessee which produce large quantities of excellent mineral waters that never reaches the market.

There are numerous hillside springs in Tennessee used now only for watering stock, whose product could be put to profitable use upon being neatly bottled, advertised and placed upon the market.

The product and value of mineral waters in the United States for 1907 are as follows:

Total number of springs reporting sales.....	584
Quantity of water sold (gallons).....	52,060,520
Average retail price per gallon at spring.....	.15
Value of medicinal waters.....	\$2,951,268
Value of table waters.....	4,380,235
Total value .....	\$7,331,503

## NATURAL GAS

While there have been no active commercial operations looking to utilizing natural gas in Tennessee it is known to exist in quantities in Franklin County.

An oil well was drilled 1,500 feet deep on the farm of J. C. Hale, near Winchester, and at a depth of 400 feet a strong flow of gas was struck. The gas has been utilized for the past four years for light and fuel by Mr. Hale. The well has a 45-pound pressure to the square inch and has never diminished.

Another oil well was sunk 1,500 feet and at a depth of 200 feet struck a strong flow of gas. Another well was recently drilled near Winchester for water, and at a depth of 120 feet struck quite a flow of gas.

The approximate value of the gas produced for the year would be about \$300.

Up to 1884 Pennsylvania produced practically all of the natural gas produced in the United States. The statement below gives the approximate value of the natural gas produced in the United States for 1884 and 1906, by States, from which the growth of the industry is shown.

State.	1884.	1906.
Pennsylvania .....	\$1,100,000	\$18,558,245
New York .....		672,795
Ohio .....		7,145,809
West Virginia .....		13,735,343
Illinois .....		87,211
Indiana .....		1,750,715
Kansas .....		4,010,986
Missouri .....		7,210
California .....		134,560
Alabama .....		
Texas .....		150,695
Louisiana .....		
Kentucky .....		287,501
Tennessee .....		300
Arkansas and Wyoming .....		34,500
Colorado .....		22,800
South Dakota .....		15,400
Oklahoma .....		259,862
Other States .....	360,000	
Total .....	\$1,460,000	\$46,873,932

## PETROLEUM

There are three oil wells in Tennessee, situated in Fentress County, on the Southern border of the Kentucky-Tennessee oil field.

They are on the Beaty, Choate and Compton farms, and produced considerable oil up to and including 1906.

The Cumberland Pipe Line Company, of Somerset, Ky., was connected with these wells and received all the oil product until the withdrawal of the company in September, 1906. There has been no oil marketed from them since that time.

Tennessee belongs to the Appalachian oil field, the oils of which are practically free from sulphur and asphalt, and rich in paraffin wax and yield the largest percentage of gasoline and illuminating oils.

The field extends from Western New York southwest along the western side of the Allegheny Mountains through Pennsylvania, Eastern Ohio, West Virginia, into Kentucky and Tennessee.

The following table shows total quantity and value of crude petroleum produced in the United States, and the average price per barrel in 1907:

STATE	1907		
	Quantity (Barrels)	Value	Average Price Per Bar- rel
California .....	89,748,375	\$ 14,699,956	\$0.370
Colorado .....	331,851	272,813	.822
Illinois .....	24,281,973	16,432,947	.677
Indiana .....	5,128,037	4,536,930	.885
Kansas .....	45,933,649	18,478,658	.402
Oklahoma.....	820,844	862,396	1.051
Kentucky .....			
Tennessee .....			
Louisiana .....	5,000,221	4,063,033	.813
Michigan .....	4,000	6,500	1.625
Missouri .....	1,212,300	2,127,748	1.755
New York.....			
Ohio .....			
Pennsylvania .....	12,207,448	14,769,888	1.210
Texas .....	9,999,806	17,579,706	1.758
Utah .....	12,322,696	10,401,868	.844
Wyoming .....	9,339	21,888	2.343
West Virginia.....	9,095,296	15,852,428	1.743
Total .....	166,095,335	\$120,106,749	\$ .723

a—The barrel used in this report, unless otherwise specified, is the United States standard barrel, containing forty-two Winchester gallons.

## PHOSPHATE ROCK IN TENNESSEE, 1907

The following statement gives name and postoffice of phosphate operators and superintendents of plants reported active in Tennessee during 1907 by counties:

*Phosphate Operators and Superintendents in Tennessee During 1907.*

OPERATORS		SUPERINTENDENTS	
COUNTY AND NAME	POSTOFFICE	COUNTY AND NAME	POSTOFFICE
<i>Davidson County.</i>		<i>Davidson County.</i>	
Sterling Phosphate Co. ....	Columbia .....	John Davis.....	Franklin
<i>Decatur County.</i>		<i>Decatur County.</i>	
Tenn. Valley Phosphate Co.....	Parsons .....	R. A. Gunn.....	Parsons
<i>Giles County.</i>		<i>Giles County.</i>	
American Phosphate Co.....	2 Rector St. N. Y	Sam S. Lord.....	Pulaski
<i>Hickman County.</i>		<i>Hickman County.</i>	
Adair & McCarty Bros.....	Atlanta, Ga.....	D. L. Johnson....	Centreville
American Phosphate Co.....	2 Rector St. N. Y	E. B. Wilson....	aSwan Bluff
Armour Fertilizer Works.....	Chicago, Ill.....	S. W. Carmack....	aCentreville
Centreville Phosphate Co.....	Columbia.....	E. B. Short.....	Centreville
Charleston (S. C.) M. & M. Co.	Mt. Pleasant...	Charles Barrett...	Mt. Pleasant
Indian Creek Phosphate Co...	Nashville .....	James Craik.....	Centreville
Meridian Fertilizer Works....	Meridian, Miss...	A. J. Robertson...	aCentreville
National Acid Co.....	New Orleans, La	S. C. Carmack....	Centreville
N. Y. & St. Louis M. & M. Co.	St. Louis, Mo...	B. W. Brice.....	aAetna
Prescott Phosphate Co.....	Cleveland, O.....	E. B. Wilson.....	Swan bluff
Swan Creek Phosphate Co....	Centreville.....	Howard Pike.....	Centreville
Tenn. Blue Rock Phos. Co.....	Mt. Pleasant....	C. D. Harder....	aFogg
Tenn. Cotton Oil Co.....	Memphis.....		Twomy
Volunteer State Phos.Co.....	Centreville.....	S. M. Ward.....	aCentreville
Eugene Worley.....	Swan Bluff.....	Eugene Worley...	Swan Bluff
<i>Lawrence County.</i>		<i>Lawrence County.</i>	
Big Swan Phosphate Co.....	Columbia.....	N. E. Barker....	Pleasant Point
<i>Lewis County.</i>		<i>Lewis County.</i>	
Charleston (S. C.) M. & M. Co..	Mt. Pleasant....	E. W. Faucett....	aHampshire, Rfd. 2
<i>Marshall County.</i>		<i>Marshall County.</i>	
Gault & Alexander.....	Cornersville.....	F. H. Gault.....	Cornersville
Houston & Liggett.....	Cornersville.....	Liggett .....	Lewisburg
<i>Maury County.</i>		<i>Maury County.</i>	
Akin Phosphate Co.....	Columbia.....	J. B. Chappell...	Columbia Rfd. 4
H. F. Alexander & Co.....	Columbia.....	John Fleming....	Mt. Pleasant
W. B. Alexander & Co.....	Mt. Pleasant....	W. B. Alexander.	Mt. Pleasant
Blue Grass Phosphate Co.....	Mt. Pleasant....	E. F. Ligon.....	Mt. Pleasant
Brooks & Hill.....	Mt. Pleasant....	W. T. Brooks....	Mt. Pleasant
Brown Rock Phosphate Co....	Mt. Pleasant....	F. R. Craig.....	Mt. Pleasant, Rfd.
Central Phosphate Co.....	Paris, France....	W. D. Stockard...	Mt. Pleasant
Charleston (S. C.) M. & M. Co..	Mt. Pleasant....	R. H. Wright....	Mt. Pleasant
Charleston (S. C.) M. & M. Co..	Mt. Pleasant....	W. D. Carter.....	Carter's Creek
Columbian Phosphate Co.....	Mt. Pleasant....	G. M. Blasdel....	Mt. Pleasant
M. B. Fariss.....	Columbia .....	M. B. Fariss.....	Columbia
Federal Chemical Co.....	Louisville, Ky...	A. E. Sheldon....	Columbia
France & Co.....	Mt. Pleasant....	J. C. France.....	Mt. Pleasant
Globe Phosphate Co.....	Mt. Pleasant....	T. E. New.....	Mt. Pleasant
Independent Phosphate Co....	Columbia .....	O. L. Dortch....	Columbia
International Phosphate Co...	Columbia .....	N. B. Elder.....	Mt. Pleasant
Jackson Phosphate Co.....	Mt. Pleasant....	Charles S. Jackson	Mt. Pleasant

*Phosphate Operators and Superintendents in Tennessee During 1907.—(Continued.)*

OPERATORS		SUPERINTENDENTS	
COUNTY AND NAME	POSTOFFICE	COUNTY AND NAME	POSTOFFICE
Johnson & Jones.....	Spring Hill.....	W. Jonnson.....	Spring Hill
Kittrell Bros.....	Mt. Pleasant.....	J. W. Kittrell....	Mt. Pleasant
Dr. S. C. Long.....	Hampshire.....	S. C. Long.....	aHampshire
Maury Phosphate Co.....	Mt. Pleasant.....	John Ruhm, Jr....	Mt. Pleasant
Middle Tenn. Phos. Co.....	Mt. Pleasant.....	W. B. Alexander..	Mt. Pleasant
Mt. Pleasant Bone Phos. Co....	Columbia .....	R. L. Granbery....	Mt. Pleasant
Mt. Pleasant Dryer Co.....	Mt. Pleasant.....	H. D. Ruhm.....	Mt. Pleasant
Petrified Bone Mining Co.....	Mt. Pleasant.....	G. M. Blasdell....	Mt. Pleasant
Petty, Morgan & Co.....	Columbia .....	Robert Gordon....	Columbia
Phosphate Supply Co.....	Mt. Pleasant.....	G. M. Blasdell....	Mt. Pleasant
Polk-Webster Phosphate Co....	Mt. Pleasant.....	W. J. Webster....	Columbia
Rich-Hayes Mining Co.....	Columbia Rfd. 3..	H. M. Hayes.....	82 Arcade, Nashville
John Ruhm, Jr.....	Mt. Pleasant.....	John Ruhm, Jr....	Mt. Pleasant
Ruhm & Barrow.....	Mt. Pleasant.....	H. D. Ruhm.....	Mt. Pleasant
Ruhm & Gregory.....	Mt. Pleasant.....	E. L. Gregory....	Mt. Pleasant
Tenn. Chemical Co.....	Nashville.....	J. M. Elliott.....	Mt. Pleasant, Rfd.
Tenn. Valley Fertilizer Co....	Columbia .....	Jeff McKnight....	Darks Mill
Union Phosphate Co.....	Columbia .....	N. E. Barker.....	Mt. Pleasant
Williams Phosphate Co.....	Mt. Pleasant.....	L. L. Frierson....	Mt. Pleasant
W. V. Wilson.....	Columbia.....	B. Estes.....	Ashwood
<i>Sumner County.</i>		<i>Sumner County.</i>	
W. N. Griffin.....	Gallatin, Rfd. 4.	W. N. Griffin.....	Gallatin, Rfd. 4
Buffalo Fertilizer Works.....	Buffalo, N. Y....	Forrest Langford..	Gallatin
Sumner Phosphate Co.....	Gallatin.....	Fred Prosser.....	Gallatin
Woodson & Guthrie.....	Gallatin.....	J. C. Woodson....	Gallatin
<i>Williamson County.</i>		<i>Williamson County.</i>	
H. F. Alexander & Co.....	Columbia .....	C. H. McKay.....	Carter's Creek
Bear Creek Phosphate Co.....	Columbia.....	J. A. Chapman....	Thompson's Station
Bethesda Phosphate Co.....	Columbia .....	J. A. Matthews....	Columbia
F. F. Clawson.....	Ashwood .....	E. E. Eggleston..	Bethesda
W. A. Cook.....	Franklin .....	W. A. Cook.....	Franklin
Potter & Johnson.....	Spring Hill, 243..	W. Johnson.....	Spring Hill
Sterling Phosphate Co.....	Columbia .....	J. K. Davis.....	Franklin
Syndicate Phosphate Co.....	Columbia .....	J. K. Davis.....	Columbia

\* a—Some underground mining; remainder is surface mining.

## PHOSPHATE VALUES, CLASSIFICATION OF PRODUCT, ETC.

The phosphate product of Tennessee is divided into three classes, blue, brown and white rock.

The blue rock is found in the counties of Hickman, Lawrence, Lewis and Maury; the brown rock is found in the counties of Davidson, Giles, Hickman, Maury, Sumner and Williamson; the white rock is found in the counties of Decatur and Perry.

The following statement gives the total number of days active, average number of employees, average wages paid per day, total wages paid, and classification and value of product for 1907:

*Phosphate Operations in Tennessee for 1907.*

COUNTY	Average Number Days Active	EMPLOYEES			PRODUCT (Long Tons)				Value of Product
		Average Number	Average Wages Paid Per Day	Total Wages Paid	Blue Rock	Brown Rock	White Rock	Total	
Davidson .....	60	10	.....	.....	.....	200	.....	200	\$ 1,200
Decatur .....	95	20	.....	.....	.....	.....	900	900	4,950
Giles .....	172	57	.....	.....	.....	4,172	.....	4,172	20,234
Hickman .....	228	543	.....	.....	34,894	40,807	.....	75,701	a303,978
Lawrence .....	140	4	.....	.....	500	.....	.....	500	2,000
Lewis .....	200	60	.....	.....	25,980	.....	.....	25,980	116,910
Maury .....	222	2,318	.....	.....	b200	516,385	.....	516,585	2,324,190
Sumner .....	207	735	.....	.....	.....	20,925	.....	20,925	83,700
Williamson ....	169	97	.....	.....	.....	9,678	.....	9,678	39,007
Total .....	216	3,344	\$1.43	\$1,033,811	61,574	592,167	900	654,641	\$2,896,169

a—Blue rock values amount to \$129,310.

b—Blue rock values amount to \$1,000.

The following statement gives product and values of phosphate rock produced in Tennessee for 1907, compared with 1906.

*Phosphate Product and Values in Tennessee for 1907, Compared With 1906.*

COUNTY	1907		1906		INCREASE	
	Product (Long Tons)	Value	Product (Long Tons)	Value	Product (Long Tons)	Value
Davidson .....	200	\$ 1,200	.....	\$.....	200	\$ 1,200
Decatur .....	900	4,950	.....	.....	900	4,950
Giles .....	4,172	20,234	210	1,000	3,962	19,234
Hickman .....	75,701	303,978	47,269	167,750	28,432	136,228
Lawrence .....	500	2,000	.....	.....	500	2,000
Lewis .....	25,980	116,910	3,196	9,588	22,784	107,322
Maury .....	516,585	2,324,190	430,440	1,602,202	86,145	721,988
Sumner .....	20,925	83,700	17,700	67,300	3,225	16,400
Williamson .....	9,678	39,007	1,000	5,000	8,678	34,007
Total .....	654,641	\$2,896,169	499,815	\$1,852,840	154,826	\$1,043,329

The net increase in product amounts to 154,826 long tons, or 31 per cent., and the net increase in values amounts to \$1,043,329, or 56.31 per cent.

The following statement gives stock on hand at beginning and at end of year; quantity and amount of sales and average prices obtained for domestic and export product by counties for 1907:

*Stock on Hand, Sales and Prices Obtained for Phosphate Rock in Tennessee for 1907.*

COUNTY	STOCK ON HAND		SALES		Sale Price Per Ton
	Beginning of Year (Long Tons)	End of Year (Long Tons)	Quantity (Long Tons)	Amount	
Davidson (brown rock).....	.....	.....	200	\$ 1,200	\$6.00
Decatur (white rock).....	.....	234	666	3,663	5.50
Giles (brown rock).....	.....	1,296	2,876	13,939	4.85
Hickman:					
Blue rock.....	6,129	8,864	32,159	119,636	3.72
Brown rock.....	4,199	11,777	33,229	138,744	4.17
Lawrence (blue rock).....	.....	400	100	300	3.00
Lewis (blue rock).....	3,150	28,766	a 364	2,002	5.50
Maury:					
Blue rock.....	.....	200	.....	.....	.....
Brown rock (export).....	4,528	9,530	121,087	614,295	5.07
Brown rock (domestic).....	39,530	69,599	360,227	1,719,477	4.77
Sumner (brown rock).....	2,200	3,300	19,825	79,300	4.00
Williamson (brown rock).....	600	1,500	8,773	44,682	5.09
Total .....	60,386	185,466	579,511	\$2,737,238	\$4.72

a—Exported.

The reports of operating companies show the following number of long tons exported to each country:

Country.	Long tons.
England .....	3,144
France .....	34,892
Germany .....	15,835
Italy .....	64,840
Spain .....	2,740
Total .....	121,451

These exports practically all go through the port at Pensacola, Florida, while some go via Norfolk, Newport News, New Orleans and Savannah.

Italy ranks first in export countries, with France second and Germany third.

England has heretofore had third place.

The following statement gives total product and values of phosphate rock in Tennessee from 1894, the first year of activity, to 1907, inclusive.

*Production and Values of Phosphate Rock in Tennessee from 1894 to 1907, Inclusive.*

YEAR	Product (L. Tons)	Value	Value per Ton	YEAR	Product (L. Tons)	Value	Value Per Ton
1894 .....	19,188	\$ 67,158	\$3.50	1902 .....	454,978	\$ 1,841,161	\$2.95
1895 .....	38,515	82,160	2.13	1903 .....	445,510	1,484,660	3.22
1896 .....	26,157	57,370	2.20	1904 .....	468,443	1,485,665	3.17
1897 .....	128,723	193,115	1.50	1905 .....	505,294	1,580,849	3.13
1898 .....	308,107	498,392	1.62	1906 .....	499,815	1,852,840	3.71
1899 .....	462,561	1,272,022	2.75	1907 .....	654,641	2,896,169	4.42
1900 .....	450,856	1,352,568	3.00	Total .....	4,856,027	\$15,300,162	\$3.15
1901 .....	394,139	1,186,033	3.01				

ANALYSES.

The analyses of the brown rock in Maury County sold for domestic purposes run as follows:

	Per cent.
Bone phosphate of lime (calcium phosphate).....	72 to 78
Iron and alumina.....	2.75 to 4
Moisture .....	.05 to 2

The analyses of the brown rock in Maury County sold for export purposes run as follows:

	Per cent.
Bone phosphate of lime (calcium phosphate).....	78 to 82
Iron and alumina.....	2.75 to 4
Moisture .....	.05 to 3

The analyses of the brown rock in Davidson, Giles, Hickman, Sumner and Williamson Counties runsimilar to the domestic rock in Maury, though the lower grades are more prevalent in these counties.

The analyses of the blue rock run as follows:

	Per cent.
Bone phosphate of lime (calcium phosphate).....	62 to 70
Iron and alumina.....	2 to 3
Moisture .....	0 to 3

The low iron and alumina in the blue rock more than offsets the low contents of bone phosphate of lime, and places it in direct competition with the domestic brown rock. In fact it will be seen from table showing sales that 364 tons of blue rock produced in Lewis County was exported, yielding the high price of \$5.50 per ton. Later advices have been received that the producing company was well pleased with the satisfactory result from this shipment.

The analyses of the white rock in Decatur County run from 68 to 74 per cent. bone phosphate of lime, with about 3 per cent iron.

The analyses of the white rock in Perry County run from 78 to 83 per cent. bone phosphate of lime and has less than 3 per cent. of iron.

#### METHOD OF MINING.

Mining for brown rock is all surface mining, the overburden ranging from nothing to 15 feet. Mining for blue rock is all under ground and conducted by tunneling. The blue rock strata runs from 20 to 48 inches in thickness.

As compared with the cost of mining brown rock the powder and dynamite used in mining the blue rock necessarily increases the cost of production about 30 cents per ton.

#### SALES AND DISPOSITION OF PRODUCT.

The total sales (domestic and export) for the year amounted to 579,511 long tons, valued at \$2,737,238, or \$4.72 per ton. As compared with 1906 this is an increase of 63,199 long tons, or 12.24 per cent., and an increase in value of \$757,266, or 38.30 per cent., and an increase in value per ton of 89 cents.

The phosphate rock sold for home consumption in the United States during 1907 amounted to 458,060 long tons, which brought the sum of \$2,120,941, or \$4.63 per ton. As compared with 1906 this is an increase in product of 41,730 long tons, or 10 per cent., and an increase in value of \$596,275, or 39.11 per cent., and an increase in value per ton of 97 cents.

The phosphate rock sold for export purposes or consumption in foreign countries for 1907 amounted to 121,451 long tons, which brought the sum of \$616,297, or \$5.08 per ton. As compared with 1906 this is an increase of 21,469 long tons, or 21.50 per cent., and an increase in value of \$160,991, or 35.36 per cent., and an increase in value per ton of 53 cents.

The most notable feature connected with the export trade was the shipment of 364 long tons of blue rock to England, Germany and Italy, which was attended with satisfactory results.

The great bulk of the rock sold for domestic purposes was consumed by the various fertilizer manufacturers east of the Mississippi River.

If these fertilizer companies form the combination or trust reported to be under consideration they will in future control the sales and regulate the prices of all phosphate rock produced in the United States.

## NEW DEVELOPMENT.

There was more activity during the year by way of new development than was ever known heretofore since operations began, both through new operations and the extension of the older operating plants. This was due to the unprecedented demand for the low as well as the higher graded rock and the extremely high prices prevailing during the entire year.

## GROWTH OF THE PHOSPHATE INDUSTRY IN THE UNITED STATES.

In order that the growth of this industry since 1892, the first year for which the statistics are available, the production and values of phosphate rock in the United States by States, classified by grades and based upon the marketable product, are given for the years 1892 and 1906.

*Production of Phosphate Rock in the United States for 1892 and 1906, Based Upon the Marketed Product.*

STATES	1892			1906		
	Quantity (Long Tons)	Value	Average Price Per Ton	Quantity (Long Tons)	Value	Average Price Per Ton
<i>Florida:</i>						
Hard Rock.....	a 155,908	\$ 859,276	\$5 53	587,598	\$3,440,276	\$5 85
Land Pebble.....	21,905	111,271	5 08	675,444	2,029,202	3 00
River Pebble.....	b 102,820	415,453	4 04	41,463	116,100	2 80
Soft Rock.....	6,710	32,418	5 00	-----	-----	----
Total.....	287,343	\$1,418,418	\$4 90	1,304,505	\$5,585,578	\$4 28
<i>South Carolina:</i>						
Land Rock.....	243,653	\$1,236,447	\$5 07	190,180	\$ 711,447	\$3 74
River Rock.....	150,575	641,262	4 25	33,495	105,621	3 15
Total.....	394,228	\$1,877,709	\$4 76	223,675	\$ 817,068	\$3 65
<i>Tennessee:</i>						
Blue Rock.....	-----	-----	----	35,669	\$ 114,997	\$3 22
Brown Rock.....	-----	-----	----	510,705	2,027,917	3 97
White Rock.....	-----	-----	----	1,303	5,077	3 90
Total.....	-----	-----	----	547,677	\$2,147,991	\$3 92
Other States.....	-----	-----	----	c 5,100	c \$ 28,800	\$5 65
Grand Total.....	681,571	\$3,296,127	\$4 83	2,080,957	\$8,579,437	\$4 12

a—Includes 52,708 tons of hard rock carried over in stock from 1891.

b—Includes 12,120 tons of river pebble carried over in stock from 1891.

c—Includes Arkansas and Idaho.

Tennessee ranks second in the phosphate rock producing States as to marketed product, and for 1906 produced one-fourth of the entire marketed product of the United States.

## IMPORTS.

For the year 1907 the following fertilizers were imported and entered for consumption in the United States:

Kind.	Quantity. Long tons.	Value.
Guano .....	30,287	\$ 400,004
Kieserite and Kainite.....	346,266	2,526,584
Apatite, bone dust, crude phosphates and other substances used only for manure .....	194,121	2,579,843
Total .....	570,674	\$5,506,431

## WORLD'S PRODUCTION OF PHOSPHATE ROCK.

The world's production of phosphate rock for 1905, which is nearest the year under review for which full statistics could be obtained is as follows:

*World's Production of Phosphate Rock for 1905 by Countries in Metric Tons.*

Country.	Quantity (Metric tons.)	Value.
Algeria .....	334,784	\$ 1,225,126
Araba (Dutch West Indies).....	23,307	b
Belgium .....	193,305	332,292
Canada .....	1,179	8,425
Christmas Island (Straits Settlement).....	99,519	b
France .....	476,720	2,093,118
Norway .....	2,522	33,768
Spain .....	1,370	7,295
Sweden .....	b	b
Tunis .....	521,731	1,812,493
United States.....	1,978,345	6,763,403
Total .....	3,632,482	\$12,275,920

b—Statistics not yet available.

The United States furnished 54.45 per cent of the total world's product for the year. Tennessee furnished 14 per cent of the world's product for the year.

**SAND AND GRAVEL**

The following statement shows the product and value of sand and gravel in Tennessee for 1907 by counties, classified by uses:

*Sand and Gravel Product and Value in Tennessee for 1907 by Uses in Cubic Yards of 2,500 Pounds.*

COUNTIES	Total Number of Employees	1		2		3		4	
		Molding Sand		Building Sand		Stone Sand		Engine Sand	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Carter .....	18	304	\$ 127	6,164	\$ 2,959	.....	.....	1,250	\$ 600
Davidson .....	24	200	150	39,525	27,588	.....	.....	.....	.....
Decatur .....	30	.....	.....	.....	.....	.....	.....	.....	.....
Hamilton .....	13	5,700	5,710	10,149	9,368	.....	.....	.....	.....
Henry .....	4	.....	.....	.....	.....	.....	.....	.....	.....
Hickman .....	4	729	268	.....	.....	.....	.....	.....	.....
Knox .....	15	3,017	1,660	10,000	5,000	6,000	\$3,000	10,000	4,000
Madison .....	4	360	370	.....	.....	.....	.....	.....	.....
Marion .....	15	.....	.....	36,000	50,000	.....	.....	.....	.....
Roane .....	25	14,320	12,160	18,000	16,500	.....	.....	2,000	1,000
Shelby .....	38	.....	.....	816,261	32,650	.....	.....	15,004	4,501
Total .....	190	24,630	\$20,445	936,099	\$144,065	6,000	\$3,000	28,254	\$10,101

*Sand and Gravel Product and Value in Tennessee by Uses (Continued), in Cubic Yards of 2,500 Pounds.*

COUNTIES	5		6		7		8	
	Furnace Sand		Other Sand		Gravel		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Carter .....	4,000	\$1,600	.....	.....	.....	.....	11,718	\$ 5,286
Davidson .....	.....	.....	100	\$200	1,000	1,000	40,825	28,938
Decatur .....	.....	.....	.....	.....	50,000	20,000	50,000	20,000
Hamilton .....	.....	.....	.....	.....	.....	.....	15,849	15,078
Henry .....	900	360	500	250	.....	.....	1,400	610
Hickman .....	.....	.....	.....	.....	.....	.....	729	268
Knox .....	.....	.....	.....	.....	.....	.....	29,017	13,660
Madison .....	.....	.....	.....	.....	.....	.....	360	370
Marion .....	.....	.....	.....	.....	.....	.....	36,000	50,000
Roane .....	5,000	5,000	.....	.....	1,000	1,000	40,320	35,660
Shelby .....	.....	.....	.....	.....	215,842	99,732	1,047,107	136,883
Total .....	9,900	\$6,960	600	\$450	267,842	\$121,732	1,273,325	\$306,753

**RECAPITULATION.**

Total number of employees.....	190
Average wages paid per day.....	\$1.68
Total amount paid for labor.....	\$89,529

## Product and value by uses:

Kind	Product (Cubic Yards 2,500 Lbs.	Value	Value Per Cubic Yard
Molding sand.....	24,630	\$ 20,445	.83
Building sand.....	936,099	144,065	.15
tone sand.....	6,000	3,000	.50
Engine sand.....	28,254	10,101	.36
Furnace sand .....	9,900	6,960	.70
Other sand.....	600	450	.75
Gravel .....	267,842	121,732	.45
Total .....	1,273,325	\$306,753	.24

If it is desired to figure these statistics on the basis of short tons, simply add on  $\frac{1}{4}$  to the product herein given. This would give total quantity as 1,591,636 short tons, valued at \$306,753, or 19 cents per ton.

The prices of sand varies with the treatment after being taken from the pit.

Sand washed, dried, screened and then loaded for shipment commands a higher price.

**STONE**

Tennessee is endowed with a variety of limestone, marble and sandstone. The product as embraced in the statistics herein given includes the stone sold by the quarry men, and only such manufactured product as is turned out by the producer.

An examination of the statistics will show the various counties containing the stone area now undergoing development. There are so many different units of measurements used in selling and measuring stone in its many varied forms that the department has found it necessary as well as convenient to reduce all product to short tons of 2,000 pounds, except that the unit for measurement for marble product is cubic feet.

Limestone does not include limestone burned into lime.

The total value of stone produced in Tennessee for 1907 is as follows:

Limestone .....	\$ 372,143
Marble .....	699,041
Sandstone .....	15,179
<b>Total .....</b>	<b>\$1,086,363</b>

The following table gives the value of Limestone, marble and sand stone in Tennessee used for building purposes in 1907:

*Value of Stone (Limestone, marble and sandstone) produced in Tennessee in 1907 and Used for Building Purposes.*

KIND	Rough	Dressed	TOTAL
Limestone .....	\$ 4,607	\$ 5,276	\$ 9,883
Marble .....	202,720	11,375	214,095
Sandstone .....	1,995	13,000	14,995
<b>Total .....</b>	<b>\$209,322</b>	<b>\$29,651</b>	<b>\$238,973</b>

The product and values of stone produced in Tennessee for 1907 classified by uses will be found in the following tables:

The following table gives product and value of crushed stone produced in Tennessee in 1907 by uses:

Uses.	Quantity (Short tons.)	Value.
Road-making .....	28,687	\$ 8,804
Railroad ballast.....	230,976	104,156
Concrete .....	97,624	57,680
<b>Total .....</b>	<b>337,287</b>	<b>\$170,640</b>

a—Sandstone product, 94 short tons, and values, \$94.

The industrial depression and financial and trade conditions during the latter part of 1907 resulted in a material decrease in the output of building stone for the United States. This decrease, however, was more than offset by the increased output of crushed stone, which is now being more extensively used in making concretes and roads.

The crushed stone industry has made rapid strides in the past few years, as will be shown by the following statistics, which show building and crushed stone values in the United States from 1898 to 1907, inclusive:

*Value of Building Stone and of Crushed Stone in the United States from 1898 to 1907.*

YEAR	Building Stone (Rough and Dressed)	Crushed Stone	YEAR	Building Stone (Rough and Dressed)	Crushed Stone
1898 .....	\$ 5,122,511	\$ 4,031,045	1903 .....	\$19,795,491	\$13,188,938
1899 .....	10,741,927	4,692,343	1904 .....	18,883,465	15,530,122
1900 .....	10,672,598	6,525,368	1905 .....	20,240,809	16,419,614
1901 .....	15,112,600	8,560,432	1906 .....	20,681,625	17,467,486
1902 .....	20,790,341	11,480,959	1907 .....	16,675,811	22,054,297

### LIMESTONE.

The following statement gives total number of employees and value of limestone production in Tennessee in 1907 by counties and uses:

*Value of Limestone Production in Tennessee in 1907 by Uses.*

COUNTY	Total Number of Employees	CRUSHED STONE											Flux	Other	Total
		Rough Building	Dressed Building	Paving	Curbing	Flagging	Rubble	Riprap	Concrete						
									Road Making	Railroad Ballast	Concrete				
		1	2	3	4	5	6	7	8	9	10	11	12	13	
Carter	31											\$ 12,812		\$ 12,812	
Claiborne	25											12,250		12,250	
Coffee	30									\$ 7,500				7,500	
Davidson	105	\$2,000	\$1,079	\$ 1,772	\$ 733		\$ 927	\$ 81		24,152	\$ 13,391		42	44,177	
Decatur	16							195		480	10,500			11,175	
Franklin	40									18,000				18,000	
Giles	25	90	600		1,625	\$ 30							\$200	2,545	
Hamilton	165	1,995	3,597		1,584		4,823	200	\$ 100	6,263	20,789	34,006		73,357	
Hickman	25											9,338		9,338	
James	6											3,463		3,463	
Jefferson	40									27,811				27,811	
Knox	80			21,000					7,000	8,700	2,500			39,200	
Lawrence	6	522					400						498	1,420	
Lewis	12											12,960		12,960	
Marion	50										10,000			10,000	
Montgomery	35			2,000	900				800			11,803		14,703	
Rhea	95									3,750		15,700		19,450	
Roane	60							7,913				9,075		16,988	
Robertson	40									7,500	500			8,000	
Rutherford	6								810					810	
Unicoi	35											26,184		26,184	
Total	927	\$4,607	\$5,276	\$ 24,772	\$4,942	\$ 30	\$6,150	\$8,389	\$8,710	\$104,156	\$ 57,680	\$146,833	\$689	\$372,143	

### RECAPITULATION.

Total number of employees.....	927
Average wages paid per day.....	\$1.40
Total amount paid for labor.....	\$246,106

## Product and value by uses:

Kind	Amount (Short Tons)	Value	Value Per Ton
Building (rough).....	5,767	\$ 4,607	\$0.80
Building (dressed).....	4,513	5,276	1.17
Paving .....	27,440	24,772	1.01
Curbing .....	a955	4,842	b5.07
Flagging .....	36	30	.83
Rubble .....	8,244	6,150	.75
Riprap .....	14,135	8,389	.59
Crushed stone:			
Road making.....	8,593	8,710	1.01
Railroad ballast.....	230,976	104,156	.45
Concrete .....	97,624	57,680	.60
Flux .....	295,698	146,833	.50
Other purposes.....	460	698	1.50
Total .....	694,441	\$372,143	.536

a—Equivalent to 12,088 lineal feet of 158 pounds.

b—Equivalent to 40 cents per foot.

**MARBLE**

The following statement gives name and Post Office of marble quarry operators, and location of quarries in Tennessee in 1907, by counties:

*Name and Post Office of Marble Quarry Operators in Tennessee for 1907 by Counties.*

No.	OPERATORS		LOCATION OF WORKS
	COUNTY AND NAME	POSTOFFICE	
	<i>Blount County.</i>		
1	John J. Craig Co.....	Knoxville.....	Friendsville
2	Evans Marble Co.....	Knoxville.....	Friendsville
3	Knox Marble & Ry. Co.....	Knoxville.....	Friendsville
4	Meadow Marble Co.....	Greenback, Rfd. 4.....	Meadow
5	Quaker Marble Co.....	Friendsville.....	Friendsville
6	Tenn. Producers' Marble Co.	Knoxville.....	Bearden
	<i>Hawkins County.</i>		
7	James Cooper.....	Knoxville, 301 W. 5th Ave.....	Rogersville
8	H. B. Stamps.....	Galbraith Springs.....	Galbraith Springs
	<i>Knox County.</i>		
9	American Marble Co.....	Knoxville.....	Knoxville
10	Evans Marble Co.....	Knoxville.....	Knoxville
11	T. S. Godfrey Marble Co....	Knoxville.....	Knoxville
12	Gray Eagle Marble Co.....	Knoxville.....	Knoxville
13	Maxey Marble Co.....	Knoxville.....	Knoxville
14	John M. Ross.....	Knoxville.....	Knoxville
15	Ross Marble Co.....	Knoxville.....	Knoxville
16	Tenn. Marble Co.....	Concord.....	Concord
17	Tenn. Producers' Marble Co.	Knoxville.....	Knoxville
18	United States Marble Co....	Knoxville.....	Knoxville
19	Victoria Marble Co.....	Knoxville.....	Knoxville
	<i>Union County.</i>		
20	Republic Marble Co.....	Knoxville.....	Luttrell

The following statement gives total number of employes and value of marble product in Tennessee for 1907 by counties and uses:

*Value of Marble Production in Tennessee for 1907 by Uses.*

COUNTY	Total No. Employes	ROUGH			DRESSED				Grand Total
		Building	Monu-mental	Other Purposes	Build-ing	Monu-mental	Orna-mental	Interior Decora-tion	
Blount .....	162	\$ 42,595	\$ 3,750	.....	\$ 3,125	\$1,500	.....	\$126,446	\$177,416
Hawkins .....	30	.....	.....	\$2,000	.....	.....	\$20,000	.....	22,000
Knox .....	370	149,625	8,500	.....	8,250	1,000	.....	299,750	467,125
Union .....	57	10,500	.....	.....	.....	.....	.....	22,000	32,500
Total .....	619	\$202,720	\$12,250	\$2,000	\$11,375	\$2,500	\$20,000	\$448,196	\$699,041

**RECAPITULATION.**

Total number of employes.....	619
Average wages paid per day.....	\$1.31
Total amount paid for labor.....	\$169,982

## Product and value by uses:

	Product (Cubic Feet)	Value	Price per Cubic Foot	Per Cent of Total Value
Rough building.....	199,090	\$202,720	\$1.02	28.95
Rough monumental.....	9,000	12,250	1.36	1.75
Rough other purposes.....	500	2,000	4.00	.29
Total rough.....	208,590	\$216,970	\$1.04	30.99
Dressed building .....	8,500	\$ 11,375	\$1.34	1.63
Dressed monumental .....	1,000	2,500	2.50	.36
Dressed ornamental .....	3,000	20,000	6.66	2.99
Dressed interior decoration .....	201,521	448,196	2.22	64.03
Total dressed .....	214,021	\$482,071	\$2.25	69.01
Grand total .....	422,611	\$699,041	\$1.65	100.00

As compared with 1906 this is an increase of 60,674 cubic feet, or 17 per cent., and an increase in values of \$122,782, or 21.30 per cent.

The value of marble product in Tennessee from 1898 to 1907, inclusive, is as follows:

Year	Value	Year	Value
1898 .....	\$216,814	1903 .....	\$438,450
1899 .....	334,705	1904 .....	523,872
1900 .....	424,054	1905 .....	536,729
1901 .....	494,637	1906 .....	576,259
1902 .....	518,256	1907 .....	699,041

The marble belt of Tennessee averages about twenty miles in width and extends a distance of 150 miles near the eastern boundary of the State from the county of McMinn to the county of Hawkins, and is traversed the entire distance by the Southern Railroad.

The operations in Knox and Blount counties now have connections also with the Louisville & Nashville Railroad. Knoxville is the central point of operations and several mills there are constantly run to their full capacity.

Tennessee marble is especially noted for its burden-bearing strength, and is therefore extensively used for building purposes, more than 30 per cent. of the 1907 product being so used.

Practical and competent tests have also demonstrated that the Tennessee marble is the most compact stone of its character in existence. This renders it useful for outside work and its beauty creates a demand for it for interior decorations and ornamental purposes.

For 1907 Tennessee furnished 64.03 per cent. of its marble product for interior decorations, which was a larger per cent of marketed product than was furnished for that purpose by any State in the Union except California and Kentucky.

The color ranges from a very dark mottled chocolate with small dotted spots of white to an almost pure white, and permits of a fine polish.

It is especially suited for monumental purposes from the fact that it does not absorb tanin or stains from soot or sulphur fumes, and stains from other causes or means can be readily removed with soap and water.

The value of the marketed product for 1906 in the United States amounted to \$7,582,938, with Tennessee third in rank.

Vermont was first in rank in values, amounting to \$4,576,913, and Georgia second, with values amounting to \$919,356.

**SANDSTONE**

The following statement gives total numyer of employees and value of sandstone production in Tennessee in 1907 by counties and uses:

*Value of Sandstone Production in Tennessee in 1907 by Counties and Uses.*

COUNTY	Total No. of Employees	Rough Building	Dressed Building	Curbing	Crushed for Road Making	Other	Total
Bledsoe .....	2	\$ 200					\$ 200
Franklin .....	20	1,795	\$13,000		\$94		14,889
Putnam .....	1			\$60		\$30	90
Total .....	23	\$1,995	\$13,000	\$60	\$94	\$30	\$15,179

**RECAPITULATION.**

Total number of employees.....	23
Average wages paid per day.....	\$1.45
Total amount paid for labor .....	\$7,340

Product and value by uses:

Kind	Quantity (short tons)	Value	Value per ton
Rough building .....	665	\$ 1,995	\$3.00
Dressed building .....	2,939	13,000	4.42
Curbing .....	47	60	1.20
Crushed—Road-making .....	94	94	1.00
Other uses .....	20	30	1.50
Total .....	3,765	\$15,179	\$4.00

Tennessee is richly endowed with a variety of this valuable stone, which is suited specially for building purposes.

It is available in Hiawassee Gap on the Louisville & Nashville Railroad Company in Chilhowie Mountains, and in the counties of Anderson, Franklin, Bledsoe, White, Morgan, Putnam, Campbell and Fentress.

The most extensive, as well as the most important area of sandstone in Tennessee is on the western lower rim of Cumberland Mountains in the counties of Bledsoe, Franklin, Putnam and White.

The stone in this area is known as the Cumberland buff stone, and has a light brown color. When first taken from the ground it is soft and easy to treat, but after being quarried for a few days it becomes nearly as hard and difficult to handle as granite.

Where its destination for final use requires a long haul this peculiarity in its formation necessitates the treatment of the product before leaving the quarry.

